

Cloud Computing Concepts Technology Architecture Ebook

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The Enterprise Cloud - James Bond 2015-05-19
Despite the buzz surrounding the cloud computing, only a small percentage of organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and technology managers how to transition their organization's traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to

the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud

Cloud Computing - Naresh Kumar Sehgal 2018-03-23

This book provides readers with an overview of Cloud Computing, starting with historical background on mainframe computers and early networking protocols, leading to current concerns such as hardware and systems security, performance, emerging areas of IoT, Edge Computing etc. Readers will benefit from the in-depth discussion of cloud computing usage and the underlying architecture, with focus on best practices for using a dynamic cloud infrastructure, cloud operations management and cloud security. The authors explain carefully the “why’s and how’s” of Cloud Computing, so engineers will find this book and invaluable introduction to the topic.

Service-Oriented Architecture (paperback) - Thomas Erl 2016-02-19

"Service Oriented Architecture is a hot, but often misunderstood topic in IT today. Thomas articulately describes the concepts, specifications, and standards behind service orientation and Web Services. For enterprises adopting SOA, there is detailed advice for service-oriented analysis, planning, and design. This book is a must read!" --Alex Lynch, Principal Consultant, Microsoft Enterprise Services "One primary objective of applying SOA in design is to

provide business value to the solutions we build. Understanding the right approach to analyzing, designing, and developing service-oriented solutions is critical. Thomas has done a great job of demystifying SOA in practical terms with his book." --Rick Weaver, IBM Senior Consulting Certified SW I/T Specialist "A pragmatic guide to SOA principles, strategy, and best practices that distills the hype into a general framework for approaching SOA adoption in complex enterprise environments." --Sameer Tyagi, Senior Staff Engineer, Sun Microsystems "A very timely and much needed contribution to a rapidly emerging field. Through clarifying the principles and nuances of this space, the author provides a comprehensive treatment of critical key aspects of SOA from analysis and planning to standards ranging from WS-specifications to BPEL. I'll be recommending this book to both clients and peers who are planning on embracing SOA principles." --Ravi Palepu, Senior Field Architect, Rogue Wave Software "Finally, an SOA book based on real implementation experience in production environments. Too many SOA books get lost in the technical details of Web Services standards, or simply repeat vendor hype. This book covers the really hard parts: the complex process of planning, designing and implementing service-oriented architectures that meet organizational goals. It is an essential companion to any software developer, architect, or project manager implementing--or thinking about implementing--a service-oriented architecture." --Priscilla Walmsley, Managing Director of Datypic "Thomas Erl's Service-Oriented Architecture: Concepts, Technology, and Design is as good an introduction to service-oriented architectures as one could wish for. In a single volume, it covers the entire topic, from theory to real-world use to technical details. The examples are superb and the writing is wonderfully clear." --Ronald Bourret, Author, "XML and Databases" "Finally an SOA book which gets to the point with real world answers and examples. Erl guides you on a real world SOA journey. From architecture design to industry standards, this book is well written and can be easily referenced for everyday use. When embarking on your own service orientated adventures, this is the book you want in your bag." --Clark Sell, Vice

President, CSell Incorporated "Organizations struggling to evolve existing service-oriented solutions beyond simple Web Services now have an expert resource available. Leading the way to the true service-oriented enterprise, Thomas Erl demystifies the complexities of the open WS-I standards with detailed practical discussions and case studies. Erl's depth and clarity makes this work a superb complement to his Field Guide." --Kevin P. Davis, PhD., Software Architect "This book is an excellent guide for architects, developers, and managers who are already working with or are considering developing Web Services or Service-Oriented Architecture solutions. The book is divided into four sections. In the first section the fundamental technologies of XML, Web Services and Service-Oriented Architectures are described in detail with attention given to emerging standards. The book is well written and very thorough in its coverage of the subject. I recommend this book highly to anyone interested in enterprise level service architectures." --Adam Hocek, President and CTO, Broadstrokes, Inc. Additional praise quotes are published at: www.soabooks.com/reviews.asp The foremost "how-to" guide to SOA Service-Oriented Architecture (SOA) is at the heart of a revolutionary computing platform that is being adopted world-wide and has earned the support of every major software provider. In Service-Oriented Architecture: Concepts, Technology, and Design, Thomas Erl presents the first end-to-end tutorial that provides step-by-step instructions for modeling and designing service-oriented solutions from the ground up. Erl uses more than 125 case study examples and over 300 diagrams to illuminate the most important facets of building SOA platforms: goals, obstacles, concepts, technologies, standards, delivery strategies, and processes for analysis and design. His book's broad coverage includes Detailed step-by-step processes for service-oriented analysis and service-oriented design An in-depth exploration of service-orientation as a distinct design paradigm, including a comparison to object-orientation A comprehensive study of SOA support in .NET and J2EE development and runtime platforms Descriptions of over a dozen key Web services

technologies and WS-* specifications, including explanations of how they interrelate and how they are positioned within SOA The use of "In Plain English" sections, which describe complex concepts through non-technical analogies Guidelines for service-oriented business modeling and the creation of specialized service abstraction layers A study contrasting past architectures with SOA and reviewing current industry influences Project planning and the comparison of different SOA delivery strategies The goal of this book is to help you attain a solid understanding of what constitutes contemporary SOA along with step-by-step guidance for realizing its successful implementation. About the Web Sites Erl's Service-Oriented Architecture books are supported by two Web sites. [http:// www.soabooks.com](http://www.soabooks.com) provides a variety of content resources and [http:// www.soaspecs.com](http://www.soaspecs.com) supplies a descriptive portal to referenced specifications. ♦ Copyright Pearson Education. All rights reserved.

Mastering Cloud Computing - Rajkumar Buyya
2013-04-05

Mastering Cloud Computing is designed for undergraduate students learning to develop cloud computing applications. Tomorrow's applications won't live on a single computer but will be deployed from and reside on a virtual server, accessible anywhere, any time.

Tomorrow's application developers need to understand the requirements of building apps for these virtual systems, including concurrent programming, high-performance computing, and data-intensive systems. The book introduces the principles of distributed and parallel computing underlying cloud architectures and specifically focuses on virtualization, thread programming, task programming, and map-reduce programming. There are examples demonstrating all of these and more, with exercises and labs throughout. Explains how to make design choices and tradeoffs to consider when building applications to run in a virtual cloud environment Real-world case studies include scientific, business, and energy-efficiency considerations

Business in the Cloud - Michael H. Hugos
2010-11-02

A close look at cloud computing's transformational role in business Covering cloud

computing from what the business leader needs to know, this book describes how IT can nimbly ramp up revenue initiatives, positively impact business operations and costs, and how this allows business leaders to shed worry about technology so they can focus on their business. It also reveals the cloud's effect on corporate organization structures, the evolution of traditional IT in the global economy, potential benefits and risks of cloud models and most importantly, how the IT function is being rethought by companies today who are making room for the coming tidal wave that is cloud computing. Why IT and business thinking must change to capture the full potential of cloud computing Topics including emerging cloud solutions, data security, service reliability, the new role of IT and new business organization structures Other titles by Hugos include: *Business Agility: Sustainable Prosperity in a Relentlessly Competitive World* and *Essentials of Supply Chain Management, 2nd Edition* Practical and timely, this book reveals why it's worth every company's time and effort to exploit cloud computing's potential for their business's survival and success.

Executive's Guide to Cloud Computing - Eric A. Marks
2010-03-25

Your organization can save and thrive in the cloud with this first non-technical guide to cloud computing for business leaders In less than a decade Google, Amazon, and Salesforce.com went from unknown ideas to powerhouse fixtures in the economic landscape; in even less time offerings such as LinkedIn, Youtube, Facebook, Twitter and many others also carved out important roles; in less than five years Apple's iTunes became the largest music retailer in North America. They all share one key strategic decision - each of these organizations chose to harness the power of cloud computing to power their drives to dominance. With roots in supercomputing and many other technical disciplines, cloud computing is ushering in an entirely new economic reality - technology-enabled enterprises built on low cost, flexible, and limitless technical infrastructures. The Executive's Guide to Cloud Computing reveals how you can apply the power of cloud computing throughout your enterprise, giving members of the C-suite a detailed look at: Why cloud

computing must be a top priority on your company's IT roadmaps How the drive for scale, lower costs and greater agility is making cloud computing a fiscal and technological imperative The relationship between cloud computing and other relevant IT initiatives The strategic implications of cloud computing for the enterprise Where to begin and how to get started integrating cloud computing into your existing operations Now you can harness cloud computing's potential for your organization. Executive's Guide to Cloud Computing shows you how.

Big Data - Balamurugan Balusamy 2021-03-15 Learn Big Data from the ground up with this complete and up-to-date resource from leaders in the field Big Data: Concepts, Technology, and Architecture delivers a comprehensive treatment of Big Data tools, terminology, and technology perfectly suited to a wide range of business professionals, academic researchers, and students. Beginning with a fulsome overview of what we mean when we say, "Big Data," the book moves on to discuss every stage of the lifecycle of Big Data. You'll learn about the creation of structured, unstructured, and semi-structured data, data storage solutions, traditional database solutions like SQL, data processing, data analytics, machine learning, and data mining. You'll also discover how specific technologies like Apache Hadoop, SQOOP, and Flume work. Big Data also covers the central topic of big data visualization with Tableau, and you'll learn how to create scatter plots, histograms, bar, line, and pie charts with that software. Accessibly organized, Big Data includes illuminating case studies throughout the material, showing you how the included concepts have been applied in real-world settings. Some of those concepts include: The common challenges facing big data technology and technologists, like data heterogeneity and incompleteness, data volume and velocity, storage limitations, and privacy concerns Relational and non-relational databases, like RDBMS, NoSQL, and NewSQL databases Virtualizing Big Data through encapsulation, partitioning, and isolating, as well as big data server virtualization Apache software, including Hadoop, Cassandra, Avro, Pig, Mahout, Oozie, and Hive The Big Data analytics lifecycle,

including business case evaluation, data preparation, extraction, transformation, analysis, and visualization Perfect for data scientists, data engineers, and database managers, Big Data also belongs on the bookshelves of business intelligence analysts who are required to make decisions based on large volumes of information. Executives and managers who lead teams responsible for keeping or understanding large datasets will also benefit from this book.

Cloud Computing - Dan C. Marinescu 2013-05-30

Cloud Computing: Theory and Practice provides students and IT professionals with an in-depth analysis of the cloud from the ground up. Beginning with a discussion of parallel computing and architectures and distributed systems, the book turns to contemporary cloud infrastructures, how they are being deployed at leading companies such as Amazon, Google and Apple, and how they can be applied in fields such as healthcare, banking and science. The volume also examines how to successfully deploy a cloud application across the enterprise using virtualization, resource management and the right amount of networking support, including content delivery networks and storage area networks. Developers will find a complete introduction to application development provided on a variety of platforms. Learn about recent trends in cloud computing in critical areas such as: resource management, security, energy consumption, ethics, and complex systems Get a detailed hands-on set of practical recipes that help simplify the deployment of a cloud based system for practical use of computing clouds along with an in-depth discussion of several projects Understand the evolution of cloud computing and why the cloud computing paradigm has a better chance to succeed than previous efforts in large-scale distributed computing

Cloud Computing and Virtualization - Dac-Nhuong Le 2018-03-12

The purpose of this book is first to study cloud computing concepts, security concern in clouds and data centers, live migration and its importance for cloud computing, the role of firewalls in domains with particular focus on virtual machine (VM) migration and its security concerns. The book then tackles design,

implementation of the frameworks and prepares test-beds for testing and evaluating VM migration procedures as well as firewall rule migration. The book demonstrates how cloud computing can produce an effective way of network management, especially from a security perspective.

Cloud Technology: Concepts, Methodologies, Tools, and Applications - Management

Association, Information Resources 2014-10-31

As the Web grows and expands into ever more remote parts of the world, the availability of resources over the Internet increases exponentially. Making use of this widely prevalent tool, organizations and individuals can share and store knowledge like never before. Cloud Technology: Concepts, Methodologies, Tools, and Applications investigates the latest research in the ubiquitous Web, exploring the use of applications and software that make use of the Internet's anytime, anywhere availability. By bringing together research and ideas from across the globe, this publication will be of use to computer engineers, software developers, and end users in business, education, medicine, and more.

Cloud Computing - Lizhe Wang 2017-12-19

Cloud computing has created a shift from the use of physical hardware and locally managed software-enabled platforms to that of virtualized cloud-hosted services. Cloud assembles large networks of virtual services, including hardware (CPU, storage, and network) and software resources (databases, message queuing systems, monitoring systems, and load-balancers). As Cloud continues to revolutionize applications in academia, industry, government, and many other fields, the transition to this efficient and flexible platform presents serious challenges at both theoretical and practical levels—ones that will often require new approaches and practices in all areas. Comprehensive and timely, Cloud Computing: Methodology, Systems, and Applications summarizes progress in state-of-the-art research and offers step-by-step instruction on how to implement it. Summarizes Cloud Developments, Identifies Research Challenges, and Outlines Future Directions Ideal for a broad audience that includes researchers, engineers, IT professionals, and graduate students, this book is designed in three sections:

Fundamentals of Cloud Computing: Concept, Methodology, and Overview Cloud Computing Functionalities and Provisioning Case Studies, Applications, and Future Directions It addresses the obvious technical aspects of using Cloud but goes beyond, exploring the cultural/social and regulatory/legal challenges that are quickly coming to the forefront of discussion. Properly applied as part of an overall IT strategy, Cloud can help small and medium business enterprises (SMEs) and governments in optimizing expenditure on application-hosting infrastructure. This material outlines a strategy for using Cloud to exploit opportunities in areas including, but not limited to, government, research, business, high-performance computing, web hosting, social networking, and multimedia. With contributions from a host of internationally recognized researchers, this reference delves into everything from necessary changes in users' initial mindset to actual physical requirements for the successful integration of Cloud into existing in-house infrastructure. Using case studies throughout to reinforce concepts, this book also addresses recent advances and future directions in methodologies, taxonomies, IaaS/SaaS, data management and processing, programming models, and applications.

Cloud Computing Bible - Barrie Sosinsky 2010-12-10

The complete reference guide to the hot technology of cloud computing Its potential for lowering IT costs makes cloud computing a major force for both IT vendors and users; it is expected to gain momentum rapidly with the launch of Office Web Apps later this year. Because cloud computing involves various technologies, protocols, platforms, and infrastructure elements, this comprehensive reference is just what you need if you'll be using or implementing cloud computing. Cloud computing offers significant cost savings by eliminating upfront expenses for hardware and software; its growing popularity is expected to skyrocket when Microsoft introduces Office Web Apps This comprehensive guide helps define what cloud computing is and thoroughly explores the technologies, protocols, platforms and infrastructure that make it so desirable Covers mobile cloud computing, a significant

area due to ever-increasing cell phone and smartphone use. Focuses on the platforms and technologies essential to cloud computing. Anyone involved with planning, implementing, using, or maintaining a cloud computing project will rely on the information in *Cloud Computing Bible*.

Cloudonomics - Joe Weinman 2012-07-05

The ultimate guide to assessing and exploiting the customer value and revenue potential of the Cloud. A new business model is sweeping the world—the Cloud. And, as with any new technology, there is a great deal of fear, uncertainty, and doubt surrounding cloud computing. *Cloudonomics* radically upends the conventional wisdom, clearly explains the underlying principles and illustrates through understandable examples how Cloud computing can create compelling value—whether you are a customer, a provider, a strategist, or an investor. *Cloudonomics* covers everything you need to consider for the delivery of business solutions, opportunities, and customer satisfaction through the Cloud, so you can understand it—and put it to work for your business. *Cloudonomics* also delivers insight into when to avoid the cloud, and why. Quantifies how customers, users, and cloud providers can collaborate to create win-wins. Reveals how to use the Laws of *Cloudonomics* to define strategy and guide implementation. Explains the probable evolution of cloud businesses and ecosystems. Demolishes the conventional wisdom on cloud usage, IT spend, community clouds, and the enterprise-provider cloud balance. Whether you're ready for it or not, Cloud computing is here to stay. *Cloudonomics* provides deep insights into the business value of the Cloud for executives, practitioners, and strategists in virtually any industry—not just technology executives but also those in the marketing, operations, economics, venture capital, and financial fields.

Essentials of Cloud Computing - K.

Chandrasekaran 2014-12-05

Cloud computing—accessing computing resources over the Internet—is rapidly changing the landscape of information technology. Its primary benefits compared to on-premise computing models are reduced costs and increased agility and scalability. Hence, cloud computing is

receiving considerable interest among several stakeholders—businesses, the IT industry. *Cloud Computing* - Jaydip Sen 2017-06-14
In the era of Internet of Things and with the explosive worldwide growth of electronic data volume, and associated need of processing, analysis, and storage of such humongous volume of data, it has now become mandatory to exploit the power of massively parallel architecture for fast computation. Cloud computing provides a cheap source of such computing framework for large volume of data for real-time applications. It is, therefore, not surprising to see that cloud computing has become a buzzword in the computing fraternity over the last decade. This book presents some critical applications in cloud frameworks along with some innovation design of algorithms and architecture for deployment in cloud environment. It is a valuable source of knowledge for researchers, engineers, practitioners, and graduate and doctoral students working in the field of cloud computing. It will also be useful for faculty members of graduate schools and universities.

Cloud Computing - Thomas Erl 2013

Explores cloud computing, breaking down the concepts, models, mechanisms, and architectures of this technology while allowing for the financial assessment of resources and how they compare to traditional storage systems.

Architecting Cloud Computing Solutions - Kevin L. Jackson 2018-05-30

Accelerating Business and Mission Success with Cloud Computing. Key Features A step-by-step guide that will practically guide you through implementing Cloud computing services effectively and efficiently. Learn to choose the most ideal Cloud service model, and adopt appropriate Cloud design considerations for your organization. Leverage Cloud computing methodologies to successfully develop a cost-effective Cloud environment successfully. Book Description Cloud adoption is a core component of digital transformation. Scaling the IT environment, making it resilient, and reducing costs are what organizations want. *Architecting Cloud Computing Solutions* presents and explains critical Cloud solution design considerations and technology decisions required to choose and deploy the right Cloud

service and deployment models, based on your business and technology service requirements. This book starts with the fundamentals of cloud computing and its architectural concepts. It then walks you through Cloud service models (IaaS, PaaS, and SaaS), deployment models (public, private, community, and hybrid) and implementation options (Enterprise, MSP, and CSP) to explain and describe the key considerations and challenges organizations face during cloud migration. Later, this book delves into how to leverage DevOps, Cloud-Native, and Serverless architectures in your Cloud environment and presents industry best practices for scaling your Cloud environment. Finally, this book addresses (in depth) managing essential cloud technology service components such as data storage, security controls, and disaster recovery. By the end of this book, you will have mastered all the design considerations and operational trades required to adopt Cloud services, no matter which cloud service provider you choose. What you will learn Manage changes in the digital transformation and cloud transition process Design and build architectures that support specific business cases Design, modify, and aggregate baseline cloud architectures Familiarize yourself with cloud application security and cloud computing security threats Design and architect small, medium, and large cloud computing solutions Who this book is for If you are an IT Administrator, Cloud Architect, or a Solution Architect keen to benefit from cloud adoption for your organization, then this book is for you. Small business owners, managers, or consultants will also find this book useful. No prior knowledge of Cloud computing is needed.

Handbook of Cloud Computing - Borko Furht
2010-09-11

Cloud computing has become a significant technology trend. Experts believe cloud computing is currently reshaping information technology and the IT marketplace. The advantages of using cloud computing include cost savings, speed to market, access to greater computing resources, high availability, and scalability. Handbook of Cloud Computing includes contributions from world experts in the field of cloud computing from academia, research laboratories and private industry. This

book presents the systems, tools, and services of the leading providers of cloud computing; including Google, Yahoo, Amazon, IBM, and Microsoft. The basic concepts of cloud computing and cloud computing applications are also introduced. Current and future technologies applied in cloud computing are also discussed. Case studies, examples, and exercises are provided throughout. Handbook of Cloud Computing is intended for advanced-level students and researchers in computer science and electrical engineering as a reference book. This handbook is also beneficial to computer and system infrastructure designers, developers, business managers, entrepreneurs and investors within the cloud computing related industry.

Handbook of Cloud Computing - Dr. Anand Nayyar
2019-09-18

Great POSSIBILITIES and high future prospects to become ten times folds in the near FUTURE DESCRIPTION The book "Handbook of Cloud Computing" provides the latest and in-depth information of this relatively new and another platform for scientific computing which has great possibilities and high future prospects to become ten folds in near future. The book covers in comprehensive manner all aspects and terminologies associated with cloud computing like SaaS, PaaS and IaaS and also elaborates almost every cloud computing service model. The book highlights several other aspects of cloud computing like Security, Resource allocation, Simulation Platforms and futuristic trend i.e. Mobile cloud computing. The book will benefit all the readers with all in-depth technical information which is required to understand current and futuristic concepts of cloud computing. No prior knowledge of cloud computing or any of its related technology is required in reading this book. KEY FEATURES Comprehensively gives clear picture of current state-of-the-art aspect of cloud computing by elaborating terminologies, models and other related terms. Enlightens all major players in Cloud Computing industry providing services in terms of SaaS, PaaS and IaaS. Highlights Cloud Computing Simulators, Security Aspect and Resource Allocation. In-depth presentation with well-illustrated diagrams and simple to understand technical concepts of cloud. WHAT WILL YOU LEARN Cloud Computing,

Virtualisation Software as a Service, Platform as a Service, Infrastructure as a Service Data in Cloud and its Security Cloud Computing - Simulation, Mobile Cloud Computing Specific Cloud Service Models Resource Allocation in Cloud Computing WHO THIS BOOK IS FOR Students of Polytechnic Diploma Classes- Computer Science/ Information Technology Graduate Students- Computer Science/ CSE / IT/ Computer Applications Master Class Students—Msc (CS/IT)/ MCA/ M.Phil, M.Tech, M.S. Researcher's—Ph.D Research Scholars doing work in Virtualization, Cloud Computing and Cloud Security Industry Professionals- Preparing for Certifications, Implementing Cloud Computing and even working on Cloud Security Table of Contents 1. Introduction to Cloud Computing 2. Virtualisation 3. Software as a Service 4. Platform as a Service 5. Infrastructure as a Service 6. Data in Cloud 7. Cloud Security 8. Cloud Computing - Simulation 9. Specific Cloud Service Models 10. Resource Allocation in Cloud Computing 11. Mobile Cloud Computing

The Cloud Computing Book - Douglas Comer 2021-07-01

This latest textbook from bestselling author, Douglas E. Comer, is a class-tested book providing a comprehensive introduction to cloud computing. Focusing on concepts and principles, rather than commercial offerings by cloud providers and vendors, *The Cloud Computing Book: The Future of Computing Explained* gives readers a complete picture of the advantages and growth of cloud computing, cloud infrastructure, virtualization, automation and orchestration, and cloud-native software design. The book explains real and virtual data center facilities, including computation (e.g., servers, hypervisors, Virtual Machines, and containers), networks (e.g., leaf-spine architecture, VLANs, and VxLAN), and storage mechanisms (e.g., SAN, NAS, and object storage). Chapters on automation and orchestration cover the conceptual organization of systems that automate software deployment and scaling. Chapters on cloud-native software cover parallelism, microservices, MapReduce, controller-based designs, and serverless computing. Although it focuses on concepts and principles, the book uses popular technologies in examples, including Docker containers and

Kubernetes. Final chapters explain security in a cloud environment and the use of models to help control the complexity involved in designing software for the cloud. The text is suitable for a one-semester course for software engineers who want to understand cloud, and for IT managers moving an organization's computing to the cloud.

Cloud Computing - Kris Jamsa 2013

Explains what cloud computing is and how this new technology is being used to make lives easier.

Achieving Federated and Self-Manageable Cloud Infrastructures: Theory and Practice - Villari, Massimo 2012-05-31

Cloud computing presents a promising approach for implementing scalable information and communications technology systems for private and public, individual, community, and business use. *Achieving Federated and Self-Manageable Cloud Infrastructures: Theory and Practice* overviews current developments in cloud computing concepts, architectures, infrastructures and methods, focusing on the needs of small to medium enterprises. The topic of cloud computing is addressed on two levels: the fundamentals of cloud computing and its impact on the IT world; and an analysis of the main issues regarding the cloud federation, autonomic resource management, and efficient market mechanisms, while supplying an overview of the existing solutions able to solve them. This publication is aimed at both enterprise business managers and research and academic audiences alike.

Cloud Computing Design Patterns

(paperback) - Thomas Erl 2017-03-09

"This book continues the very high standard we have come to expect from ServiceTech Press. The book provides well-explained vendor-agnostic patterns to the challenges of providing or using cloud solutions from PaaS to SaaS. The book is not only a great patterns reference, but also worth reading from cover to cover as the patterns are thought-provoking, drawing out points that you should consider and ask of a potential vendor if you're adopting a cloud solution." --Phil Wilkins, Enterprise Integration Architect, Specsavers "Thomas Erl's text provides a unique and comprehensive perspective on cloud design patterns that is

clearly and concisely explained for the technical professional and layman alike. It is an informative, knowledgeable, and powerful insight that may guide cloud experts in achieving extraordinary results based on extraordinary expertise identified in this text. I will use this text as a resource in future cloud designs and architectural considerations." --Dr. Nancy M. Landreville, CEO/CISO, NML Computer Consulting

The Definitive Guide to Cloud Architecture and Design Best-selling service technology author Thomas Erl has brought together the de facto catalog of design patterns for modern cloud-based architecture and solution design. More than two years in development, this book's 100+ patterns illustrate proven solutions to common cloud challenges and requirements. Its patterns are supported by rich, visual documentation, including 300+ diagrams. The authors address topics covering scalability, elasticity, reliability, resiliency, recovery, data management, storage, virtualization, monitoring, provisioning, administration, and much more. Readers will further find detailed coverage of cloud security, from networking and storage safeguards to identity systems, trust assurance, and auditing. This book's unprecedented technical depth makes it a must-have resource for every cloud technology architect, solution designer, developer, administrator, and manager.

Topic Areas Enabling ubiquitous, on-demand, scalable network access to shared pools of configurable IT resources Optimizing multitenant environments to efficiently serve multiple unpredictable consumers Using elasticity best practices to scale IT resources transparently and automatically Ensuring runtime reliability, operational resiliency, and automated recovery from any failure Establishing resilient cloud architectures that act as pillars for enterprise cloud solutions Rapidly provisioning cloud storage devices, resources, and data with minimal management effort Enabling customers to configure and operate custom virtual networks in SaaS, PaaS, or IaaS environments Efficiently provisioning resources, monitoring runtimes, and handling day-to-day administration Implementing best-practice security controls for cloud service architectures and cloud storage Securing on-premise Internet

access, external cloud connections, and scaled VMs Protecting cloud services against denial-of-service attacks and traffic hijacking Establishing cloud authentication gateways, federated cloud authentication, and cloud key management Providing trust attestation services to customers Monitoring and independently auditing cloud security Solving complex cloud design problems with compound super-patterns

Information Governance - Robert F. Smallwood 2014-03-28

Proven and emerging strategies for addressing document and records management risk within the framework of information governance principles and best practices Information Governance (IG) is a rapidly emerging "super discipline" and is now being applied to electronic document and records management, email, social media, cloud computing, mobile computing, and, in fact, the management and output of information organization-wide. IG leverages information technologies to enforce policies, procedures and controls to manage information risk in compliance with legal and litigation demands, external regulatory requirements, and internal governance objectives. Information Governance: Concepts, Strategies, and Best Practices reveals how, and why, to utilize IG and leverage information technologies to control, monitor, and enforce information access and security policies. Written by one of the most recognized and published experts on information governance, including specialization in e-document security and electronic records management Provides big picture guidance on the imperative for information governance and best practice guidance on electronic document and records management Crucial advice and insights for compliance and risk managers, operations managers, corporate counsel, corporate records managers, legal administrators, information technology managers, archivists, knowledge managers, and information governance professionals IG sets the policies that control and manage the use of organizational information, including social media, mobile computing, cloud computing, email, instant messaging, and the use of e-documents and records. This extends to e-discovery planning and preparation. Information Governance:

Concepts, Strategies, and Best Practices provides step-by-step guidance for developing information governance strategies and practices to manage risk in the use of electronic business documents and records.

Cloud Computing: A Hands-On Approach -

Arshdeep Bahga 2013-12-09

About the Book Recent industry surveys expect the cloud computing services market to be in excess of \$20 billion and cloud computing jobs to be in excess of 10 million worldwide in 2014 alone. In addition, since a majority of existing information technology (IT) jobs is focused on maintaining legacy in-house systems, the demand for these kinds of jobs is likely to drop rapidly if cloud computing continues to take hold of the industry. However, there are very few educational options available in the area of cloud computing beyond vendor-specific training by cloud providers themselves. Cloud computing courses have not found their way (yet) into mainstream college curricula. This book is written as a textbook on cloud computing for educational programs at colleges. It can also be used by cloud service providers who may be interested in offering a broader perspective of cloud computing to accompany their own customer and employee training programs. The typical reader is expected to have completed a couple of courses in programming using traditional high-level languages at the college-level, and is either a senior or a beginning graduate student in one of the science, technology, engineering or mathematics (STEM) fields. We have tried to write a comprehensive book that transfers knowledge through an immersive "hands-on approach", where the reader is provided the necessary guidance and knowledge to develop working code for real-world cloud applications. Additional support is available at the book's website:

www.cloudcomputingbook.info Organization The book is organized into three main parts. Part I covers technologies that form the foundations of cloud computing. These include topics such as virtualization, load balancing, scalability & elasticity, deployment, and replication. Part II introduces the reader to the design & programming aspects of cloud computing. Case studies on design and implementation of several cloud applications in the areas such as image

processing, live streaming and social networks analytics are provided. Part III introduces the reader to specialized aspects of cloud computing including cloud application benchmarking, cloud security, multimedia applications and big data analytics. Case studies in areas such as IT, healthcare, transportation, networking and education are provided.

Cloud Computing - Sunilkumar Manvi

2021-03-08

Comprehensive and timely, *Cloud Computing: Concepts and Technologies* offers a thorough and detailed description of cloud computing concepts, architectures, and technologies, along with guidance on the best ways to understand and implement them. It covers the multi-core architectures, distributed and parallel computing models, virtualization, cloud developments, workload and Service-Level-Agreements (SLA) in cloud, workload management. Further, resource management issues in cloud with regard to resource provisioning, resource allocation, resource mapping and resource adaptation, ethical, non-ethical and security issues in cloud are followed by discussion of open challenges and future directions. This book gives students a comprehensive overview of the latest technologies and guidance on cloud computing, and is ideal for those studying the subject in specific modules or advanced courses. It is designed in twelve chapters followed by laboratory setups and experiments. Each chapter has multiple choice questions with answers, as well as review questions and critical thinking questions. The chapters are practically-focused, meaning that the information will also be relevant and useful for professionals wanting an overview of the topic.

Architecting the Cloud - Michael J. Kavis

2014-01-28

An expert guide to selecting the right cloud service model for your business Cloud computing is all the rage, allowing for the delivery of computing and storage capacity to a diverse community of end-recipients. However, before you can decide on a cloud model, you need to determine what the ideal cloud service model is for your business. Helping you cut through all the haze, *Architecting the Cloud* is vendor neutral and guides you in making one of

the most critical technology decisions that you will face: selecting the right cloud service model(s) based on a combination of both business and technology requirements. Guides corporations through key cloud design considerations Discusses the pros and cons of each cloud service model Highlights major design considerations in areas such as security, data privacy, logging, data storage, SLA monitoring, and more Clearly defines the services cloud providers offer for each service model and the cloud services IT must provide Arming you with the information you need to choose the right cloud service provider, Architecting the Cloud is a comprehensive guide covering everything you need to be aware of in selecting the right cloud service model for you.

Spatial Cloud Computing - Chaowei Yang
2013-12-04

An exploration of the benefits of cloud computing in geoscience research and applications as well as future research directions, Spatial Cloud Computing: A Practical Approach discusses the essential elements of cloud computing and their advantages for geoscience. Using practical examples, it details the geoscience requirements of cloud computing, covers general procedures and considerations when migrating geoscience applications onto cloud services, and demonstrates how to deploy different applications. The book discusses how to choose cloud services based on the general cloud computing measurement criteria and cloud computing cost models. The authors examine the readiness of cloud computing to support geoscience applications using open source cloud software solutions and commercial cloud services. They then review future research and developments in data, computation, concurrency, and spatiotemporal intensities of geosciences and how cloud service can be leveraged to meet the challenges. They also introduce research directions from the aspects of technology, vision, and social dimensions. Spatial Cloud Computing: A Practical Approach a common workflow for deploying geoscience applications and provides references to the concepts, technical details, and operational guidelines of cloud computing. These features and more give developers, geoscientists, and IT

professionals the information required to make decisions about how to select and deploy cloud services.

Virtual and Networked Organizations, Emergent Technologies and Tools - Goran D. Putnik
2012-07-25

This book constitutes the thoroughly refereed post-conference proceedings of the First International Conference on Virtual and Networked Organizations, Emergent Technologies, and Tools, ViNOrg 2011, held in Ofir, Portugal, in July 2011. The 35 revised full papers presented were carefully reviewed and selected from over 60 initial submissions. The papers cover a wide range of topics, such as ubiquitous computing and organizations, cloud computing and architectures, grid computing, human-computer interfaces, serious games, data mining, Web services, cognitive systems, social networks and other emergent IT/IS approaches in various function domains, such as decision support systems, planning, design, control, negotiation, marketing, management and many other, in the context of virtual and networked enterprises and organizations.

Cloud Computing Simplified - Surbhi Rastogi
2021-04-07

Getting familiar with cloud computing features from scratch to advanced. KEY FEATURES ● Detailed coverage on Cloud fundamentals, Cloud Service Models, and deployment models. ● Easy, detailed, and practical approach to develop skills on working with Cloud Computing. ● Includes charts, diagrams, and graphical illustrations for better visual learning on complex topics of cloud computing. DESCRIPTION Cloud computing is a technology that allows you to store, access data and programs over the internet instead of the hard drive or a server. In this book, you will gain knowledge about the fundamentals of cloud computing. This book includes a detailed description of the features of the cloud, the importance of cloud in today's era, and uses of cloud computing. This book provides you with a deep knowledge of the basics of cloud computing. You will learn about the characteristics, architecture, and uses and importance of cloud computing. This book also explores the concept of scalability and redundancy regarding cloud computing. You will learn about the various cloud deployment and

service models. You will also gain knowledge of virtualization technology. You will also have a guided tour of concepts related to cloud management, data storage and security, and cloud operations and technologies. At the end of the book, you will learn about the advanced concepts of cloud computing and also learn about mobile cloud computing. **WHAT YOU WILL LEARN** ● In-depth understanding on the fundamentals of cloud computing. ● Explore the role and importance of cloud computing across businesses and enterprises. ● Learn about cloud deployment models and service models. ● Gain knowledge on cloud storage, cloud security, administration of cloud and mobile cloud computing. **WHO THIS BOOK IS FOR** This book is open to all graduates, beginners and working professionals to help them understand everything about cloud computing and how to operate in a cloud environment. **TABLE OF CONTENTS** 1. Introduction 2. Architecture and Applications 3. Scalability and Redundancy 4. Cloud Services 5. Cloud Deployment Models 6. Virtualization 7. Management 8. Data Storage and Security 9. Operations and Challenges 10. Technologies and Service Providers 11. Cloud Cube Model 12. Mobile Cloud Computing

(ISC)2 CCSP Certified Cloud Security Professional Official Practice Tests - Ben Malisow 2020-01-27

The only official CCSP practice test product endorsed by (ISC)2 With over 1,000 practice questions, this book gives you the opportunity to test your level of understanding and gauge your readiness for the Certified Cloud Security Professional (CCSP) exam long before the big day. These questions cover 100% of the CCSP exam domains, and include answers with full explanations to help you understand the reasoning and approach for each. Logical organization by domain allows you to practice only the areas you need to bring you up to par, without wasting precious time on topics you've already mastered. As the only official practice test product for the CCSP exam endorsed by (ISC)2, this essential resource is your best bet for gaining a thorough understanding of the topic. It also illustrates the relative importance of each domain, helping you plan your remaining study time so you can go into the exam fully confident in your knowledge. When you're ready,

two practice exams allow you to simulate the exam day experience and apply your own test-taking strategies with domains given in proportion to the real thing. The online learning environment and practice exams are the perfect way to prepare, and make your progress easy to track.

Cloud Computing - Thomas Erl 2013-05-02
Clouds are distributed technology platforms that leverage sophisticated technology innovations to provide highly scalable and resilient environments that can be remotely utilized by organizations in a multitude of powerful ways. To successfully build upon, integrate with, or even create a cloud environment requires an understanding of its common inner mechanics, architectural layers, and models, as well as an understanding of the business and economic factors that result from the adoption and real-world use of cloud-based services. In Cloud Computing: Concepts, Technology & Architecture, Thomas Erl, one of the world's top-selling IT authors, teams up with cloud computing experts and researchers to break down proven and mature cloud computing technologies and practices into a series of well-defined concepts, models, technology mechanisms, and technology architectures, all from an industry-centric and vendor-neutral point of view. In doing so, the book establishes concrete, academic coverage with a focus on structure, clarity, and well-defined building blocks for mainstream cloud computing platforms and solutions. Subsequent to technology-centric coverage, the book proceeds to establish business-centric models and metrics that allow for the financial assessment of cloud-based IT resources and their comparison to those hosted on traditional IT enterprise premises. Also provided are templates and formulas for calculating SLA-related quality-of-service values and numerous explorations of the SaaS, PaaS, and IaaS delivery models. With more than 260 figures, 29 architectural models, and 20 mechanisms, this indispensable guide provides a comprehensive education of cloud computing essentials that will never leave your side.

Mobile Cloud Computing - Meikang Qiu 2017-05-12
Mobile Cloud Computing: Models,

Implementation, and Security provides a comprehensive introduction to mobile cloud computing, including key concepts, models, and relevant applications. The book focuses on novel and advanced algorithms, as well as mobile app development. The book begins with an overview of mobile cloud computing concepts, models, and service deployments, as well as specific cloud service models. It continues with the basic mechanisms and principles of mobile computing, as well as virtualization techniques. The book also introduces mobile cloud computing architecture, design, key techniques, and challenges. The second part of the book covers optimizations of data processing and storage in mobile clouds, including performance and green clouds. The crucial optimization algorithm in mobile cloud computing is also explored, along with big data and service computing. Security issues in mobile cloud computing are covered in-depth, including a brief introduction to security and privacy issues and threats, as well as privacy protection techniques in mobile systems. The last part of the book features the integration of service-oriented architecture with mobile cloud computing. It discusses web service specifications related to implementations of mobile cloud computing. The book not only presents critical concepts in mobile cloud systems, but also drives readers to deeper research, through open discussion questions. Practical case studies are also included. Suitable for graduate students and professionals, this book provides a detailed and timely overview of mobile cloud computing for a broad range of readers.

Cloud Computing - Hiran Kamal Kant

2019-09-20

Unleash the power of cloud computing using Azure, AWS and Apache Hadoop
Key features
Provides a sound understanding of the Cloud computing concepts, architecture and its applications
Explores the practical benefits of Cloud computing services and deployment models in details
Cloud Computing Architecture, Cloud Computing Life Cycle (CCLC), Load balancing approach, Mobile Cloud Computing (MCC), Google App Engine (GAE) Virtualization and Service-Oriented Architecture (SOA)
Cloud Computing applications - Google Apps, Dropbox Cloud and Apple iCloud and its uses in various

sectors - Education, Healthcare, Politics, Business, and Agriculture
Cloud Computing platforms - Microsoft Azure, Amazon Web Services (AWS), Open Nebula, Eucalyptus, Open Stack, Nimbus and The Apache Hadoop
Architecture Adoption of Cloud Computing technology and strategies for migration to the cloud
Cloud computing adoption case studies - Sub-Saharan Africa and India
Chapter-wise Questions with Summary and Examination Model Question papers
Description
With the advent of internet, there is a complete paradigm shift in the manner we comprehend computing. Need to enable ubiquity, convenient and on-demand access to resources in highly scalable and resilient environments that can be remotely accessed, gave birth to the concept of Cloud computing. The acceptance is so rapid that the notion influences sophisticated innovations in academia, industry and research world-wide and hereby change the landscape of information technology as we thought of. Through this book, the authors tried to incorporate core principles and basic notion of cloud computing in a step-by-step manner and tried to emphasize on key concepts for clear and thorough insight into the subject. This book begins with the fundamentals of cloud computing, its service and deployment models, architecture, as well as applications and platforms. It presents some key enterprise strategies and models for the adoption of and migration to cloud. Privacy and security issues and challenges also form a major part of our discussion in the book as well as case studies of cloud computing adoption in Sub-Saharan Africa and India. The book concludes with a discussion of several advanced topics, such as Amazon Web Services (AWS), Open Nebula, Microsoft Azure, Apache Hadoop and Google App Engine (GAE).
What will you learn
Learn about the Importance of Cloud Computing in Current Digital Era
Understand the Core concepts and Principles of Cloud Computing with practical benefits
Learn about the Cloud Deployment models and Services
Discover how Cloud Computing Architecture works
Learn about the Load balancing approach and Mobile Cloud Computing (MCC)
Learn about the Virtualization and Service-Oriented Architecture (SOA) concepts
Learn about the various Cloud Computing applications, Platforms and Security

concepts Understand the adoption Cloud Computing technology and strategies for migration to the cloud Case Studies for Cloud computing adoption - Sub-Saharan Africa and India Who this book is for This book is intended for students of B.E., B.Tech., B.Sc., M.Sc., M.E., and M.Tech. as a text book. The content is designed keeping in mind the bench marked curriculum of various universities (both National and International). The book covers not only the technical details of how cloud works but also exhibits the strategy, technical design, and in-depth knowledge required to migrate existing applications to the cloud. Therefore, it makes it relevant for the beginners who wants to learn cloud computing right from the foundation. Aspiring Cloud Computing Researchers Instructors, Academicians and Professionals, if they are familiar with cloud, can use this book to learn various open source cloud computing tools, applications, technologies. They will also get a flavor of various international certification exams available. Table of contents

1. Foundation of Cloud Computing
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9. Adoption of Cloud Computing
10. Model Paper 1
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13. Model Paper 4

About the author Kamal Kant Hiran is working as Associate Professor & Head IT in the BlueCrest University College, Liberia, West Africa as well as Research Fellow, Aalborg University, Copenhagen, Denmark. He has rich experience of 14+ years as an academician and researcher in Asia, Africa and Europe. His research interests include Cloud Computing adoption theories and framework, Internet of Things (IoT) and Digital Image and Video Processing. He has several awards on his credit such as International travel grant for Germany from ITS Europe, Gold Medal Award in M. Tech (ICT), IEEE Ghana Section Award, IEEE Senior Member Recognition, IEEE Student branch award and Best Research paper award from the University of Gondar, Ethiopia. He has published research papers in peer-reviewed international journals and conferences. He is Reviewer and Editorial board member of

various reputed International Journals in Elsevier, Springer, IEEE, Bentham Science, IGI Global, IJSET, IJTEE, IJSTR and IJERT. He is the active member in organizing many international seminars, workshops and conferences in India, Ghana, Liberia, Denmark, Jordan and Ethiopia. His website: <http://www.kamalhiran.in/> His LinkedIn profile: <https://www.linkedin.com/in/kamal-kant-hiran-4553b643/> Ruchi Doshi is having more than 10 years of academic, research and software development experience in Asia and Africa. She is working as Registrar in the BlueCrest University College, Liberia, West Africa an also worked with BlueCrest University College, Ghana; Amity University, India & Trimax IT Infrastructure & Services as software engineer. She is interested in the field of Cloud computing, Computer vision, Artificial Intelligence and latest technology used in the higher education. She has published research papers in peer-reviewed international journals and conferences. She is Reviewer, Advisor, Ambassador & Editorial board member of various reputed International Journals and Conferences such as MIR Labs, USA, IEEE W4S, IJCS and IJERT. She is the active member in organizing many international events in India, Ghana, and Liberia. Her LinkedIn profile: <https://www.linkedin.com/in/ruchi-doshi-96bb63b4/> Dr. Fagbola Temitayo is currently a Post-Doctoral Fellow (PDF) at Durban University of Technology, South Africa and an Assistant Professor in the Department of Computer Science, Federal University, Oye-Ekiti, Nigeria with over 10 years of proven teaching and research experience. He bagged a Ph.D., M.Sc and B.Tech degrees in Computer Science with strong research interests in cloud computing ecosystem, deep learning, computational intelligence, social media big-data analytics, information security, decision support system and video processing. Dr Fagbola is a member of the South African Institute of Computer Scientists and Information Technologists (SAICSIT), Asian Council of Science Editors (ACSE), Machine Intelligence Institute of Africa (MIIA), Computer Professionals (Registration Council) of Nigeria (CPN), the International Association of Engineers (IAENG) and DataHack4FI in Africa. He has over 50 refereed

publications in referred international journals and conference proceedings to his credit and currently serves as a reviewer for over 15 reputable international journals. He is also a recipient of the ACM FAT's grant in November 2018. His LinkedIn profile:

<https://www.linkedin.com/in/temitayo-fagbola-5941a2169>

Mehul Mahrishi is currently working as an Associate Professor in the Faculty of Computer Science & Engineering at the Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur, India. He is a life member of International Association of Engineers and has published several research articles in National/International Journals, Conferences including Global Journals, ICCCTAM-Dubai, ICMLC-Singapore, IACC and chapters in books. He is also an active technical reviewer of Journal of Parallel and Distributed Computing (SCI & Scopus-Elsevier). His research activities are currently twofold: while the first research activity is set to explore the developmental enhancements video processing and analysis; the second major research theme is focused on the emerging capabilities of cloud computing. Mr. Mahrishi is rewarded at number of occasions in various domains including Recognition as an active reviewer by Journal of Parallel and Distributed Computing (JPDC, Elsevier, SCI & Scopus Indexed), IEEE continuing education certification for "e;Cloud Computing Enable Technologies and Recognition for outstanding performance in Campus Connect Program by Infosys, India. His LinkedIn profile: <https://www.linkedin.com/in/mehuk-mahrishi-30979026>

IoT and Edge Computing for Architects -

Perry Lea 2020-03-06

Learn to design, implement, and secure your IoT infrastructure. Revised and expanded for edge computing. Key Features Build a complete IoT system that's the best fit for your organization Learn about different concepts, tech, and trade-offs in the IoT architectural stack Understand the theory and implementation of each element that comprises IoT design Book Description Industries are embracing IoT technologies to improve operational expenses, product life, and people's well-being. An architectural guide is needed if you want to traverse the spectrum of technologies needed to build a successful IoT

system, whether that's a single device or millions of IoT devices. IoT and Edge Computing for Architects, Second Edition encompasses the entire spectrum of IoT solutions, from IoT sensors to the cloud. It examines modern sensor systems, focusing on their power and functionality. It also looks at communication theory, paying close attention to near-range PAN, including the new Bluetooth® 5.0 specification and mesh networks. Then, the book explores IP-based communication in LAN and WAN, including 802.11ah, 5G LTE cellular, Sigfox, and LoRaWAN. It also explains edge computing, routing and gateways, and their role in fog computing, as well as the messaging protocols of MQTT 5.0 and CoAP. With the data now in internet form, you'll get an understanding of cloud and fog architectures, including the OpenFog standards. The book wraps up the analytics portion with the application of statistical analysis, complex event processing, and deep learning models. The book then concludes by providing a holistic view of IoT security, cryptography, and shell security in addition to software-defined perimeters and blockchains. What you will learn Understand the role and scope of architecting a successful IoT deployment Scan the landscape of IoT technologies, from sensors to the cloud and more See the trade-offs in choices of protocols and communications in IoT deployments Become familiar with the terminology needed to work in the IoT space Broaden your skills in the multiple engineering domains necessary for the IoT architect Implement best practices to ensure reliability, scalability, and security in your IoT infrastructure Who this book is for This book is for architects, system designers, technologists, and technology managers who want to understand the IoT ecosphere, technologies, and trade-offs, and develop a 50,000-foot view of IoT architecture. An understanding of the architectural side of IoT is necessary.

Cloud Computing - Thomas Erl 2013-04-26

Clouds are distributed technology platforms that leverage sophisticated technology innovations to provide highly scalable and resilient environments that can be remotely utilized by organizations in a multitude of powerful ways. To successfully build upon, integrate with, or even create a cloud environment requires an

understanding of its common inner mechanics, architectural layers, and models, as well as an understanding of the business and economic factors that result from the adoption and real-world use of cloud-based services. In *Cloud Computing: Concepts, Technology & Architecture*, Thomas Erl, one of the world's top-selling IT authors, teams up with cloud computing experts and researchers to break down proven and mature cloud computing technologies and practices into a series of well-defined concepts, models, technology mechanisms, and technology architectures, all from an industry-centric and vendor-neutral point of view. In doing so, the book establishes concrete, academic coverage with a focus on structure, clarity, and well-defined building blocks for mainstream cloud computing platforms and solutions. Subsequent to technology-centric coverage, the book proceeds to establish business-centric models and metrics that allow for the financial assessment of cloud-based IT resources and their comparison to those hosted on traditional IT enterprise premises. Also provided are templates and formulas for calculating SLA-related quality-of-service values and numerous explorations of the SaaS, PaaS, and IaaS delivery models. With more than 260 figures, 29 architectural models, and 20 mechanisms, this indispensable guide provides a comprehensive education of cloud computing essentials that will never leave your side.

[Fog and Edge Computing](#) - Rajkumar Buyya
2019-01-30

A comprehensive guide to Fog and Edge applications, architectures, and technologies. Recent years have seen the explosive growth of the Internet of Things (IoT): the internet-connected network of devices that includes everything from personal electronics and home appliances to automobiles and industrial machinery. Responding to the ever-increasing bandwidth demands of the IoT, Fog and Edge computing concepts have developed to collect, analyze, and process data more efficiently than traditional cloud architecture. *Fog and Edge Computing: Principles and Paradigms* provides a comprehensive overview of the state-of-the-art applications and architectures driving this dynamic field of computing while highlighting

potential research directions and emerging technologies. Exploring topics such as developing scalable architectures, moving from closed systems to open systems, and ethical issues rising from data sensing, this timely book addresses both the challenges and opportunities that Fog and Edge computing presents. Contributions from leading IoT experts discuss federating Edge resources, middleware design issues, data management and predictive analysis, smart transportation and surveillance applications, and more. A coordinated and integrated presentation of topics helps readers gain thorough knowledge of the foundations, applications, and issues that are central to Fog and Edge computing. This valuable resource:

- Provides insights on transitioning from current Cloud-centric and 4G/5G wireless environments to Fog Computing
- Examines methods to optimize virtualized, pooled, and shared resources
- Identifies potential technical challenges and offers suggestions for possible solutions
- Discusses major components of Fog and Edge computing architectures such as middleware, interaction protocols, and autonomic management
- Includes access to a website portal for advanced online resources

Fog and Edge Computing: Principles and Paradigms is an essential source of up-to-date information for systems architects, developers, researchers, and advanced undergraduate and graduate students in fields of computer science and engineering.

Cloud Application Architectures - George Reese
2009-04-01

If you're involved in planning IT infrastructure as a network or system architect, system administrator, or developer, this book will help you adapt your skills to work with these highly scalable, highly redundant infrastructure services. While analysts hotly debate the advantages and risks of cloud computing, IT staff and programmers are left to determine whether and how to put their applications into these virtualized services. *Cloud Application Architectures* provides answers -- and critical guidance -- on issues of cost, availability, performance, scaling, privacy, and security. With *Cloud Application Architectures*, you will:

- Understand the differences between traditional deployment and cloud computing
- Determine whether moving existing applications to the

cloud makes technical and business sense Analyze and compare the long-term costs of cloud services, traditional hosting, and owning dedicated servers Learn how to build a transactional web application for the cloud or migrate one to it Understand how the cloud helps you better prepare for disaster recovery Change your perspective on application scaling To provide realistic examples of the book's principles in action, the author delves into some of the choices and operations available on Amazon Web Services, and includes high-level summaries of several of the other services available on the market today. Cloud Application Architectures provides best practices that apply to every available cloud service. Learn how to make the transition to the cloud and prepare your web applications to succeed.

Understanding Infrastructure Edge

Computing - Alex Marcham 2021-04-05

UNDERSTANDING INFRASTRUCTURE EDGE COMPUTING A comprehensive review of the key emerging technologies that will directly impact areas of computer technology over the next five years Infrastructure edge computing is the model of data center and network infrastructure deployment which distributes a large number of physically small data centers around an area to deliver better performance and to enable new economical applications. It is vital for those operating at business or technical levels to be positioned to capitalize on the changes that will occur as a result of infrastructure edge computing. This book provides a thorough understanding of the growth of internet infrastructure from its inception to the emergence of infrastructure edge computing. Author Alex Marcham, an acknowledged leader in the field who coined the term 'infrastructure edge computing,' presents an accessible, accurate, and expansive view of the next generation of internet infrastructure. The book features illustrative examples of 5G mobile cellular networks, city-scale AI systems, self-driving cars, drones, industrial robots, and more—technologies that increase efficiency, save time and money, and improve safety.

Covering state-of-the-art topics, this timely and authoritative book: Presents a clear and accurate survey of the key emerging technologies that will impact data centers, 5G networks, artificial intelligence and cyber-physical systems, and other areas of computer technology Explores how and why Internet infrastructure has evolved to where it stands today and where it needs to be in the near future Covers a wide range of topics including distributed application workload operation, infrastructure and application security, and related technologies such as multi-access edge computing (MEC) and fog computing Provides numerous use cases and examples of real-world applications which depend upon underlying edge infrastructure Written for Information Technology practitioners, computer technology practitioners, and students, Understanding Infrastructure Edge Computing is essential reading for those looking to benefit from the coming changes in computer technology. *Cloud Computing* - Dinesh G. Harkut 2019-01-03 In the era of the Internet of Things and Big Data, Cloud Computing has recently emerged as one of the latest buzzwords in the computing industry. It is the latest evolution of computing, where IT recourses are offered as services. Cloud computing provides on-demand, scalable, device-independent, and reliable services to its users. The exponential growth of digital data bundled with the needs of analysis, processing and storage, and cloud computing has paved the way for a cheap, secure, and omnipresent computing framework allowing for the delivery of enormous computing and storage capacity to a diverse community of end-recipients. Clouds are distributed technology platforms that leverage sophisticated technology innovations to provide highly scalable and resilient environments that can be remotely utilized by organizations in a multitude of powerful ways. The term cloud is often used as a metaphor for the Internet and can be defined as a new type of utility computing that basically uses servers that have been made available to third parties via the Internet.