
Read Online Technologies Of Cloud Computing Architecture Concepts

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KEY=CONCEPTS - SCHMIDT KENYON

Cloud Computing Concepts, Technology & Architecture

Prentice Hall 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.

Cloud Computing

Master the Concepts, Architecture and Applications with Real-world examples and Case studies

BPB Publications Unleash the power of cloud computing using Azure, AWS and Apache Hadoop 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. Audience 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. 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 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 Table of Contents 1. Foundation of Cloud Computing 2. Cloud Services and Deployment Models 3. Cloud Computing Architecture 4. Virtualization & Service Oriented Architecture 5. Cloud Security and Privacy 6. Cloud Computing Applications 7. Cloud Computing Technologies, Platform and Services 8. Adoption of Cloud Computing 9. Model Paper 1 10. Model Paper 2 11. Model Paper 3 12. Model Paper 4

Cloud Computing

Concepts, Technology & Architecture

Cloud Computing

Concepts and Technologies

CRC Press 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.

Virtual and Networked Organizations, Emergent Technologies and Tools

First International Conference, ViNOrg 2011, Ofir, Portugal, July 6-8, 2011. Revised Selected Papers

Springer 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

BPB Publications 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 Nebulla, 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.

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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 and 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>

Cloud Computing for Enterprise Architectures

Springer Science & Business Media This important text provides a single point of reference for state-of-the-art cloud computing design and implementation techniques. The book examines cloud computing from the perspective of enterprise architecture, asking the question; how do we realize new business potential with our existing enterprises? Topics and features: with a Foreword by Thomas Erl; contains contributions from an international selection of preeminent experts; presents the state-of-the-art in enterprise architecture approaches with respect to cloud computing models, frameworks, technologies, and applications; discusses potential research directions, and technologies to facilitate the realization of emerging business models through enterprise architecture approaches; provides relevant theoretical frameworks, and the latest empirical research findings.

The Enterprise Cloud Best Practices for Transforming Legacy IT

"O'Reilly Media, Inc." 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 Technology: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

IGI Global 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

Springer This title offers an introduction to the main cloud technologies and services. It deals with both commercial and open-source aspects of cloud computing and offers some practical examples of how to use cloud resources or cloud applications.

Architecting Cloud Computing Solutions

Build cloud strategies that align technology and economics while

effectively managing risk

Packt Publishing Ltd 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.

Cloud Computing Concepts, Technology & Architecture

Mastering Cloud Computing Foundations and Applications Programming

Newnes 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

Service-Oriented Architecture (paperback)

Concepts, Technology, and Design

Prentice Hall "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. ♦
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The Significant Concepts of Cloud Computing

Technology, Architecture, Applications, and Security

CreateSpace Everybody has a supposition on what is a Cloud computing. Cloud computing is a modern area emerged by distributed computing that offers many powerful benefits to different organizations. It has an ability to rent a server or a thousand of servers via information technology (IT) services whole the world. The capabilities of Cloud computing are obtained by running a geophysical modeling application on most powerful systems. Organizations can improve their efficiency to quickly and reliably respond to the needs of their customers. It is performed by making a contract for various Cloud services such as applications, software, data storages, and processing capabilities. There are some risks in Cloud-based servers such as maintaining the security of systems, asserting the privacy of information, and insuring the wise expenditures of IT resources. Cloud technology causes the dedicated services to be always on, occurring on the running systems to be upgraded, and accordance with demand to be scaled considerably. Cloud computing involves a range of underlying technologies and configuration options instead of being as a single system. Organizations should consider the strengths and weaknesses of the Cloud technology, service models, and deployment methods through evaluating services to meet their requirements. A Cloud system can extremely store and secure large amounts of data that is accessible only by authorized users and applications. It is supported and sponsored by a Cloud service provider which installs a powerful platform on the Cloud systems. The platform involves some of the required abilities such as the operating system, Apache, a MySQL database, Perl, Python, and PHP with a capability for automatically scaling in response to changing the different workloads. Cloud computing can utilize some

applications such as sales automation, email, and forum management on the Internet. Internet can protect data while providing a consumer's service as well it is able to utilize the Cloud storage for holding an application, personal data, and business. A Cloud system with the aid of the Internet can use a small number of Web services in order to integrate maps, photos, and GPS information. This book discusses about the main concepts of Cloud computing. It is an appropriate tutorial for ordinary and professional people to acquire some required information about Cloud technology. Chapter 1 introduces the overall and fundamental characteristic of Cloud systems such as Web services, Grid computing, and hardware virtualization. In Chapter 2, the architectures of Cloud computing including the deployment models and the service models defined for Cloud-based servers are described carefully. Chapter 3 explains various applications of Cloud computing in various applications such as file storage, Cloud database, and email. In Chapter 4, some popular consumer applications designed by Cloud-based systems such as Evernote, iCloud, and Spotify are represented completely. Chapter 5 discusses about the different usages of Cloud servers such Cloud monitoring, healthcare, and banking. In Chapter 6, the security issues of Cloud computing such as privacy, reliability, and compliance are presented carefully. Chapter 7 points out the famous simulation tools designed for Cloud-based issues such as CloudSim, Xen hypervisor, and UEC. Finally, Chapter 8 introduces some well-liked companies established for Cloud-based usages such as CloudLock, CloudMunch, and CloudPhysics. I hope that this book can help to ordinary people and professional researchers to design and implement various applications with Cloud technology. Undoubtedly, this book like any humanistic product is not devoid of any problem. Hence, the next version of this book can be published more appropriate than current version according to valuable suggestions of dear readers. I wish that this book can assist to computer science to design complex systems and to solve some of the exiting problems.

Social, Legal, and Ethical Implications of IoT, Cloud, and Edge Computing Technologies

IGI Global The adoption of cloud and IoT technologies in both the industrial and academic communities has enabled the discovery of numerous applications and ignited countless new research opportunities. With numerous professional markets benefiting from these advancements, it is easy to forget the non-technical issues that accompany technologies like these. Despite the advantages that these systems bring, significant ethical questions and regulatory issues have become prominent areas of discussion. Social, Legal, and Ethical Implications of IoT, Cloud, and Edge Computing Technologies is a pivotal reference source that provides vital research on the non-technical repercussions of IoT technology adoption. While highlighting topics such as smart cities, environmental monitoring, and data privacy, this publication explores the regulatory and ethical risks that stem from computing technologies.

This book is ideally designed for researchers, engineers, practitioners, students, academicians, developers, policymakers, scientists, and educators seeking current research on the sociological impact of cloud and IoT technologies.

Service-oriented Architecture Concepts, Technology, and Design

Prentice Hall Provides information on how to model and design service-oriented SOA platforms.

Technological Innovation for Cyber-Physical Systems

7th IFIP WG 5.5/SOCOLNET

Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2016, Costa de Caparica, Portugal, April 11-13, 2016, Proceedings

Springer This book constitutes the refereed proceedings of the 7th IFIP WG 5.5/SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2016, held in Costa de Caparica, Portugal, in April 2016. The 53 revised full papers were carefully reviewed and selected from 112 submissions. The papers present selected results produced in engineering doctoral programs and focus on research, development, and application of cyber-physical systems. Research results and ongoing work are presented, illustrated and discussed in the following areas: enterprise collaborative networks; ontologies; Petri nets; manufacturing systems; biomedical applications; intelligent environments; control and fault tolerance; optimization and decision support; wireless technologies; energy: smart grids, renewables, management, and optimization; bio-energy; and electronics.

Handbook of Cloud Computing

Springer Science & Business Media 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.

Cloud security mechanisms

Universitätsverlag Potsdam Cloud computing has brought great benefits in cost and flexibility for provisioning services. The greatest challenge of cloud computing remains however the question of security. The current standard tools in access control mechanisms and cryptography can only partly solve the security challenges of cloud infrastructures. In the recent years of research in security and cryptography, novel mechanisms, protocols and algorithms have emerged that offer new ways to create secure services atop cloud infrastructures. This report provides introductions to a selection of security mechanisms that were part of the "Cloud Security Mechanisms" seminar in summer term 2013 at HPI.

Big Data Analytics and Cloud Computing

A Beginner's Guide

MileStone Research Publications Big data analytics and cloud computing is the fastest growing technologies in current era. This text book serves as a purpose in providing an understanding of big data principles and framework at the beginner's level. The text book covers various essential concepts of big-data analytics and processing tools such as HADOOP and YARN. The Textbook covers an analogical understanding on bridging cloud computing with big-data technologies with essential cloud infrastructure protocol and ecosystem concepts. PART I: Hadoop Distributed

File System Basics, Running Example Programs and Benchmarks, Hadoop MapReduce Framework Essential Hadoop Tools, Hadoop YARN Applications, Managing Hadoop with Apache Ambari, Basic Hadoop Administration Procedures PART II: Introduction to Cloud Computing: Origins and Influences, Basic Concepts and Terminology, Goals and Benefits, Risks and Challenges. Fundamental Concepts and Models: Roles and Boundaries, Cloud Characteristics, Cloud Delivery Models, Cloud Deployment Models. Cloud Computing Technologies: Broadband networks and internet architecture, data center technology, virtualization technology, web technology, multi-tenant technology, service Technology Cloud Infrastructure Mechanisms: Logical Network Perimeter, Virtual Server, Cloud Storage Device, Cloud Usage Monitor, Resource Replication, Ready-made environment

Big Data

Concepts, Technology, and Architecture

John Wiley & Sons 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

Theory and Practice

Newnes *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.

Essentials of Cloud Computing

CRC Press 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, application developers, researchers, and students. To successfully embrace this new computing model, these stakeholders need to acquire new cloud computing skills and knowledge. This book is designed to provide readers with a clear and thorough understanding of the key aspects of cloud computing. Presented in an easy-to-understand style, *Essentials of Cloud Computing* begins with an introduction to basic cloud computing concepts. It then covers cloud computing architecture, deployment models, programming models, and cloud service types, such as Software as a Service (SaaS) and Infrastructure as a Service (IaaS). It also discusses the cloud's networking aspects, major service providers, open source support, and security issues. The book concludes with a discussion of several advanced topics, such as mobile clouds, media clouds, and green clouds. This book is intended for beginners as well as experienced practitioners who want to learn more about cloud computing. It includes many case studies, programming examples, and industry-based applications. Each chapter concludes with review questions that help readers check their understanding of the presented topics. *Essentials of Cloud Computing* will help readers understand

the issues and challenges of cloud computing and will give them the tools needed to develop and deploy applications in clouds.

Applications of Security, Mobile, Analytic, and Cloud (SMAC) Technologies for Effective Information Processing and Management

IGI Global From cloud computing to big data to mobile technologies, there is a vast supply of information being mined and collected. With an abundant amount of information being accessed, stored, and saved, basic controls are needed to protect and prevent security incidents as well as ensure business continuity. Applications of Security, Mobile, Analytic, and Cloud (SMAC) Technologies for Effective Information Processing and Management is a vital resource that discusses various research findings and innovations in the areas of big data analytics, mobile communication and mobile applications, distributed systems, and information security. With a focus on big data, the internet of things (IoT), mobile technologies, cloud computing, and information security, this book proves a vital resource for computer engineers, IT specialists, software developers, researchers, and graduate-level students seeking current research on SMAC technologies and information security management systems.

Cloud Computing Architecture and Applications

BoD - Books on Demand 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.

Handbook of Cloud Computing

Basic to Advance research on the concepts and design of Cloud Computing

BPB Publications 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

Research Anthology on Privatizing and Securing Data

IGI Global With the immense amount of data that is now available online, security concerns have been an issue from the start, and have grown as new technologies are increasingly integrated in data collection, storage, and transmission. Online cyber threats, cyber terrorism, hacking, and other cybercrimes have begun to take advantage of this information that can be easily accessed if not properly handled. New privacy and security measures have been developed to address this cause for concern and have become an essential area of research within the past few years and into the foreseeable future. The ways in which data is secured and privatized should be discussed in terms of the technologies being used, the methods and models for security that have been developed, and the ways in which risks can be detected, analyzed, and mitigated. The Research Anthology on Privatizing and Securing Data reveals the latest tools and technologies for privatizing and securing data across different technologies and industries. It takes a deeper dive into both risk detection and mitigation, including an analysis of cybercrimes and cyber threats, along with a sharper focus on the technologies and methods being actively implemented and utilized to secure data online. Highlighted topics include information governance and privacy, cybersecurity, data protection, challenges in big data, security threats, and more. This book is essential for data analysts, cybersecurity professionals, data scientists, security analysts, IT specialists, practitioners, researchers, academicians, and students interested in the latest trends and technologies for privatizing and securing data.

Cloud Computing

Automating the Virtualized Data Center

Cisco Press The complete guide to provisioning and managing cloud-based Infrastructure as a Service (IaaS) data center solutions Cloud computing will revolutionize the way IT resources are deployed, configured, and managed for years to come. Service providers and customers each stand to realize tremendous value from this paradigm shift--if they can take advantage of it. Cloud Computing brings together the realistic, start-to-finish guidance they need to plan, implement, and manage cloud solution architectures for tomorrow's virtualized data centers. It introduces cloud "newcomers" to essential concepts, and offers experienced operations professionals detailed guidance on delivering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). This book's replicable solutions and fully-tested best practices will help enterprises, service providers, consultants, and Cisco partners meet the challenge of provisioning end-to-

end cloud infrastructures. Drawing on extensive experience working with leading cloud vendors and integrators, the authors present detailed operations workflow examples, proven techniques for operating cloud-based network, compute, and storage infrastructure; a comprehensive management reference architecture; and a complete case study demonstrating rapid, lower-cost solutions design. Cloud Computing will be an indispensable resource for all network/IT professionals and managers involved with planning, implementing, or managing the next generation of cloud computing services. Venkata (Josh) Josyula, Ph.D., CCIE® No. 13518 is a Distinguished Services Engineer in Cisco Services Technology Group (CSTG) and advises Cisco customers on OSS/BSS architecture and solutions. Malcolm Orr, Solutions Architect for Cisco's Services Technology Solutions, advises telecoms and enterprise clients on architecting, building, and operating OSS/BSS and cloud management stacks. He is Cisco's lead architect for several Tier 1 public cloud projects. Greg Page has spent the last eleven years with Cisco in technical consulting roles relating to data center architecture/technology and service provider security. He is now exclusively focused on developing cloud/IaaS solutions with service providers and systems integrator partners.

- Review the key concepts needed to successfully deploy clouds and cloud-based services
- Transition common enterprise design patterns and use cases to the cloud
- Master architectural principles and infrastructure designs for "real-time" managed IT services
- Understand the Cisco approach to cloud-related technologies, systems, and services
- Develop a cloud management architecture using ITIL, TMF, and ITU-TMN standards
- Implement best practices for cloud service provisioning, activation, and management
- Automate cloud infrastructure to simplify service delivery, monitoring, and assurance
- Choose and implement the right billing/chargeback approaches for your business
- Design and build IaaS services, from start to finish
- Manage the unique capacity challenges associated with sporadic, real-time demand
- Provide a consistent and optimal cloud user experience

This book is part of the Networking Technology Series from Cisco Press®, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers. Category: Cloud Computing Covers: Virtualized Data Centers

Web-Based Services: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

IGI Global The recent explosion of digital media, online networking, and e-commerce has generated great new opportunities for those Internet-savvy

individuals who see potential in new technologies and can turn those possibilities into reality. It is vital for such forward-thinking innovators to stay abreast of all the latest technologies. Web-Based Services: Concepts, Methodologies, Tools, and Applications provides readers with comprehensive coverage of some of the latest tools and technologies in the digital industry. The chapters in this multi-volume book describe a diverse range of applications and methodologies made possible in a world connected by the global network, providing researchers, computer scientists, web developers, and digital experts with the latest knowledge and developments in Internet technologies.

Cloud Computing Technology

Springer Nature This open access book introduces cloud computing and related technologies from the concept, technology, and architecture of cloud computing, combined with typical application cases of cloud; provides students with a more complete knowledge framework in the field of cloud computing; and lays the foundation for future research, development, and further study in cloud computing, big data, and other related fields. As the world's leading provider of ICT (information and communication technology) infrastructure and intelligence terminals, Huawei's products are already available in a number of areas, including connectivity, security, wireless, storage, cloud computing, intelligent computing, and artificial intelligence.

The Cloud Computing Book

The Future of Computing Explained

CRC Press 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.

97 Things Every Cloud Engineer Should Know

O'Reilly Media If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer--even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Ilyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins

Cloud Computing For Dummies

John Wiley & Sons The easy way to understand and implement cloud computing technology written by a team of experts Cloud computing can be difficult to understand at first, but the cost-saving possibilities are great and many companies are getting on board. If you've been put in charge of implementing cloud computing, this straightforward, plain-English guide clears up the confusion and helps you get your plan in place. You'll learn how cloud computing enables you to run a more green IT infrastructure, and access technology-enabled services from the Internet ("in the cloud") without having to understand, manage, or invest in the technology infrastructure that supports them. You'll also find out what you need to consider when implementing a plan, how to handle security issues, and more. Cloud computing is a way for businesses to take advantage of storage and virtual services through the Internet, saving money on infrastructure and support This book provides a clear definition of cloud computing from the utility computing standpoint and also addresses security concerns Offers practical guidance on delivering and managing cloud computing services effectively and efficiently Presents a proactive and pragmatic approach to implementing cloud computing in any organization Helps IT managers and staff understand the benefits and challenges of cloud computing, how to select a service, and what's involved in getting it up and running Highly experienced author team consults and gives presentations on emerging technologies Cloud Computing For Dummies gets straight to the point, providing the practical

information you need to know.

Fog Computing

Concepts, Frameworks and Technologies

Springer This authoritative text/reference describes the state of the art of fog computing, presenting insights from an international selection of renowned experts. A particular focus is provided on development approaches, architectural mechanisms, and measurement metrics for building smart adaptable environments. The coverage also includes important related topics such as device connectivity, security and interoperability, and communication methods. Topics and features: introduces the core concepts and principles of fog computing, and reviews the latest research and best practice relating to fog/edge environments; discusses the vision for an Internet of Things (IoT) in terms of fog computing and other related distributed computing paradigms, such as cloud computing; presents a survey of the key issues and broader aspects of the fog paradigm, as well as the factors that affect adoption of fog computing; examines frameworks and methodologies for fog-based architecture design, improving performance, and measuring quality of experience; proposes tools and methodologies for analyzing large amounts of sensor data from smart city initiatives; describes approaches for designing robust services, management of data-intensive applications, context-aware data analysis, and vehicular networking; identifies potential future research directions and technological innovations in relation to distributed computing environments such as the IoT. This enlightening volume offers essential perspectives for researchers of distributed computing and computer networking, as well as for advanced undergraduate and graduate students pursuing interests in this area. Professional engineers seeking to enhance security and connectivity in their IoT systems will also find this work to be a valuable reference.

Cloud Computing Architected

This book provides an overview of Cloud Computing in an enterprise environment, describes the benefits and challenges, and then leads the reader through the process of assessing the suitability of a cloud-based approach for a given situation, calculating and justifying the investment that is required to transform the process or application, and then developing a solid design that considers the implementation as well as the ongoing operations and governance required to maintain the solution in a partially outsourced delivery model.

Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing

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

Understanding Infrastructure Edge Computing Concepts, Technologies, and Considerations

John Wiley & Sons 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. Understanding Infrastructure Edge Computing 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 in the near future.

CLOUD COMPUTING BASED PROJECTS USING DISTRIBUTED ARCHITECTURE

PHI Learning Pvt. Ltd. Development of software projects is a part of the curriculum of under-graduate and postgraduate courses. The main objective of this book is to expose the students and professionals to the latest technology, relevant theory and software development tools. This book serves as a guide to design and develop the cloud computing-based software projects using distributed architecture. It consolidates the theory, upcoming technologies and development tools for the development of two software projects—Outstation Claim Management System (OCMS) and Retirement Benefit Calculation System (RBCS). Both the projects start with the feasibility study to understand and appreciate the problem. After understanding the problem and identifying the suitable software, hardware and network environment, the problem is formally depicted using the entity relationship model and data flow diagrams. This is followed by normali-zation, creation of tables and procedures. In the book, Oracle, PL/SQL, Internet Developer Suite (IDS) and .Net framework are used to develop the full-fledged GUI-based applications. The book elaborates the problem, providing logic and interface screens to design and develop the projects using any other programming language and GUI tool in which the students are comfortable with. The book also includes a CD-ROM, which contains the source codes of OCMS and RBCS. The book is meant for the undergraduate and postgraduate students of Computer Science, Computer Applications and Information Technology. Besides, it would also be useful to the professionals to enhance their

technical skills. After going through this book, the students/professionals will be able to: Work on real-life projects. Implement the SDLC in software projects. Design the data flow diagrams and entity relationship diagrams. Use the database and normalization in software projects. Do the corrective, adaptive and perfective maintenance of a software. Learn the concepts related to IaaS, PaaS and SaaS of Cloud Computing.

Grid and Cloud Computing: Concepts, Methodologies, Tools and Applications

Concepts, Methodologies, Tools and Applications

IGI Global "This reference presents a vital compendium of research detailing the latest case studies, architectures, frameworks, methodologies, and research on Grid and Cloud Computing"--