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Fundamentals of Grid Computing-Frederic Magoules 2009-12-23 The integration and convergence of state-of-the-art technologies in the grid have enabled more flexible, automatic, and complex grid services to fulfill industrial and commercial needs, from the LHC at CERN to meteorological forecasting systems. Fundamentals of Grid Computing: Theory, Algorithms and Technologies discusses how the novel technologies

Evolving Developments in Grid and Cloud Computing: Advancing Research-Udoh, Emmanuel 2012-01-31 "This book contains investigations of grid and cloud evolution, workflow management, and the impact new computing systems have on education and industry"--Provided by publisher.

Distributed and Cloud Computing-Kai Hwang 2013-12-18 Distributed and Cloud Computing: From Parallel Processing to the Internet of Things offers complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing. It is the first modern, up-to-date distributed systems textbook; it explains how to create high-performance, scalable, reliable systems, exposing the design principles, architecture, and innovative applications of parallel, distributed, and cloud computing systems. Topics covered by this book include:

facilitating management, debugging, migration, and disaster recovery through virtualization; clustered systems for research or ecommerce applications; designing systems as web services; and social networking systems using peer-to-peer computing. The principles of cloud computing are discussed using examples from open-source and commercial applications, along with case studies from the leading distributed computing vendors such as Amazon, Microsoft, and Google. Each chapter includes exercises and further reading, with lecture slides and more available online. This book will be ideal for students taking a distributed systems or distributed computing class, as well as for professional system designers and engineers looking for a reference to the latest distributed technologies including cloud, P2P and grid computing. Complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing Includes case studies from the leading distributed computing vendors: Amazon, Microsoft, Google, and more Explains how to use virtualization to facilitate management, debugging, migration, and disaster recovery Designed for undergraduate or graduate students taking a distributed systems course—each chapter includes exercises and further reading, with lecture slides and more available online

Grid and Cloud Computing-Katarina Stanoevska 2009-11-04 In today’s dynamic business environment, IT departments are under permanent pressure to meet two divergent requirements: to reduce costs and to
support business agility with higher flexibility and responsiveness of the IT infrastructure. Grid and Cloud Computing enable a new approach towards IT. They enable increased scalability and more efficient use of IT based on virtualization of heterogeneous and distributed IT resources. This book provides a thorough understanding of the fundamentals of Grids and Clouds and of how companies can benefit from them. A wide array of topics is covered, e.g. business models and legal aspects. The applicability of Grids and Clouds in companies is illustrated with four cases of real business experiments. The experiments illustrate the technical solutions and the organizational and IT governance challenges that arise with the introduction of Grids and Clouds. Practical guidelines on how to successfully introduce Grids and Clouds in companies are provided.

Cloud, Grid and High Performance Computing: Emerging Applications-Udoh, Emmanuel 2011-06-30 "This book offers new and established perspectives on architectures, services and the resulting impact of emerging computing technologies, including investigation of practical and theoretical issues in the related fields of grid, cloud, and high performance computing"--Provided by publisher.

Grid and Cloud Computing: Concepts, Methodologies, Tools and Applications-Management Association, Information Resources 2012-04-30 "This reference presents a vital compendium of research detailing the latest case studies, architectures, frameworks, methodologies, and research on Grid and Cloud Computing"--

Grid Computing-Lizhe Wang 2018-10-03 Identifies Recent Technological Developments Worldwide The field of grid computing has made rapid progress in the past few years, evolving and developing in almost all areas, including concepts, philosophy, methodology, and usages. Grid Computing: Infrastructure, Service, and Applications reflects the recent advances in this field, covering the research aspects that involve infrastructure, middleware, architecture, services, and applications. Grid Systems Across the Globe The first section of the book focuses on infrastructure and middleware and presents several national and international grid systems. The text highlights China Research and Development environment Over Wide-area Network (CROWN), several ongoing cyberinfrastructure efforts in New York State, and Enabling Grids for E-sciencE (EGEE), which is co-funded by the European Commission and the world’s largest multidisciplinary grid infrastructure today. The second part of the book discusses recent grid service advances. The authors examine the UK National Grid Service (NGS), the concept of resource allocation in a grid environment, OMIIBMPEL, and the possibility of treating scientific workflow issues using techniques from the data stream community. The book describes an SLA model, reviews portal and workflow technologies, presents an overview of PKIs and their limitations, and introduces Pindex, a peer-to-peer model for grid information services. New Projects and Initiatives The third section includes an analysis of innovative grid applications. Topics covered include the WISDOM initiative, incorporating flow-level networking models into grid simulators, system-level virtualization, grid usage in the high-energy physics environment in the LHC project, and the Service Oriented HLA RTI (SOHR) framework. With a comprehensive summary of past advances, this text is a window into the future of this nascent technology, forging a path for the next generation of cyberinfrastructure developers.

Applications and Developments in Grid, Cloud, and High Performance Computing-Udoh, Emmanuel 2012-09-30 "This book provides insight into the current trends and emerging issues by investigating grid and cloud evolution, workflow management, and the impact new computing systems have on the education fields as well as the industries"--Provided by publisher.

Achieving Real-time in Distributed Computing-Dimosthenis P. Kyriazis 2012 Real-time systems are of importance to a large number of university laboratories and research institutes worldwide, and without the proper integration of real-time into distributed computing, institutions simply could not function. Achieving Real-Time in Distributed Computing: From Grids to Clouds offers over 400 accounts from a wide range of specific research efforts. Major focus is given to the need for methodologies, tools, and
architectures for complex distributed systems that address the practical issues of performance guarantees, timed execution, real-time management of resources, synchronized communication under various load conditions, satisfaction of QoS constraints, and dealing with the trade-offs between these aspects.


Novel Practices and Trends in Grid and Cloud Computing—Raj, Pethuru 2019-06-28 Business and IT organizations are currently embracing new strategically sound concepts in order to be more customer-centric, competitive, and cognitive in their daily operations. While useful, the various software tools, pioneering technologies, as well as their unique contributions largely go unused due to the lack of information provided on their special characteristics. Novel Practices and Trends in Grid and Cloud Computing is a collection of innovative research on the key concerns of cloud computing and how they are being addressed, as well as the various technologies and tools empowering cloud theory to be participative, penetrative, pervasive, and persuasive. While highlighting topics including cyber security, smart technology, and artificial intelligence, this book is ideally designed for students, researchers, and business managers on the lookout for innovative IT solutions for all the business automation software and improvisations of computational technologies.

Desktop Grid Computing—Christophe Cerin 2012-06-25 Desktop Grid Computing presents common techniques used in numerous models, algorithms, and tools developed during the last decade to implement desktop grid computing. These techniques enable the solution of many important sub-problems for middleware design, including scheduling, data management, security, load balancing, result certification, and fault tolerance. The book’s first part covers the initial ideas and basic concepts of desktop grid computing. The second part explores challenging current and future problems. Each chapter presents the sub-problems, discusses theoretical and practical issues, offers details about implementation and experiments, and includes references to further reading and notes. One of the first books to give a thorough and up-to-date presentation of this topic, this resource describes various approaches and models as well as recent trends that underlie the evolution of desktop grids. It balances the theory of designing desktop grid middleware and architecture with applications and real-world deployment on large-scale platforms.

Market-Oriented Grid and Utility Computing—Rajkumar Buyya 2009-11-11 The first single-source reference covering the state of the art in grid and utility computing economy research This book presents the first integrated, single-source reference on market-oriented grid and utility computing. Divided into four main parts—and with contributions from a panel of experts in the field—it systematically and carefully explores: Foundations—presents the fundamental concepts of market-oriented computing and the issues and challenges in allocating resources in a decentralized computing environment. Business models—covers business models for service providers and brokers supporting different types of distributed applications, as well as business rules-based models for managing virtual organizations and accounting operations and services in grid computing environments. Policies and agreements—introduces policies, agreements, and specifications for the negotiation and establishment of contracts between providers and consumers. It also covers different approaches for resource allocation based on service-level agreements (SLAs) and management of risks associated with SLA violations. Resource allocation and scheduling mechanisms—covers economic models, such as commodity models, reciprocation, auctions, and game theory, and middleware technologies, such as Nimrod/G and Gridbus, for market-oriented grid computing and utility-oriented resource allocation. This book expertly captures the state of the art in the field while also identifying potential research directions and technologies that will facilitate the creation of global commercial grid and utility computing systems. It is an indispensable reference for systems architects, practitioners, developers, new researchers, and graduate students.
Euro-Par 2010 - Parallel Processing - Pasqua D'Ambra 2010-09-02
Annotation This book constitutes the refereed proceedings of the 16th International Euro-Par Conference held in Ischia, Italy, in August/September 2010. The 90 revised full papers presented were carefully reviewed and selected from 256 submissions. The papers are organized in topical sections on support tools and environments; performance prediction and evaluation; scheduling and load-balancing; high performance architectures and compilers; parallel and distributed data management; grid, cluster and cloud computing; peer to peer computing; distributed systems and algorithms; parallel and distributed programming; parallel numerical algorithms; multicore and manycore programming; theory and algorithms for parallel computation; high performance networks; and mobile and ubiquitous computing.

Cloud Analytics with Google Cloud Platform - Sanket Thodge 2018-04-10
Combine the power of analytics and cloud computing for faster and efficient insights Key Features Master the concept of analytics on the cloud: and how organizations are using it Learn the design considerations while applying a cloud analytics solution Design an end-to-end analytics pipeline on the cloud Book Description With the ongoing data explosion, more and more organizations all over the world are slowly migrating their infrastructure to the cloud. These cloud platforms also provide their distinct analytics services to help you get faster insights from your data. This book will give you an introduction to the concept of analytics on the cloud, and the different cloud services popularly used for processing and analyzing data. If you’re planning to adopt the cloud analytics model for your business, this book will help you understand the design and business considerations to be kept in mind, and choose the best tools and alternatives for analytics, based on your requirements. The chapters in this book will take you through the 70+ services available in Google Cloud Platform and their implementation for practical purposes. From ingestion to processing your data, this book contains best practices on building an end-to-end analytics pipeline on the cloud by leveraging popular concepts such as machine learning and deep learning. By the end of this book, you will have a better understanding of cloud analytics as a concept as well as a practical know-how of its implementation What you will learn Explore the basics of cloud analytics and the major cloud solutions Learn how organizations are using cloud analytics to improve the ROI Explore the design considerations while adopting cloud services Work with the ingestion and storage tools of GCP such as Cloud Pub/Sub Process your data with tools such as Cloud Dataproc, BigQuery, etc Over 70 GCP tools to build an analytics engine for cloud analytics Implement machine learning and other AI techniques on GCP Who this book is for This book is targeted at CIOs, CTOs, and even analytics professionals looking for various alternatives to implement their analytics pipeline on the cloud. Data professionals looking to get started with cloud-based analytics will also find this book useful. Some basic exposure to cloud platforms such as GCP will be helpful, but not mandatory.

Grids, Clouds and Virtualization - Massimo Cafaro 2010-09-14 Research into grid computing has been driven by the need to solve large-scale, increasingly complex problems for scientific applications. Yet the applications of grid computing for business and casual users did not begin to emerge until the development of the concept of cloud computing, fueled by advances in virtualization techniques, coupled with the increased availability of ever-greater Internet bandwidth. The appeal of this new paradigm is mainly based on its simplicity, and the affordable price for seamless access to both computational and storage resources. This timely text/reference introduces the fundamental principles and techniques underlying grids, clouds and virtualization technologies, as well as reviewing the latest research and expected future developments in the field. Readers are guided through the key topics by internationally recognized experts, enabling them to develop their understanding of an area likely to play an ever more significant role in coming years. Topics and features: presents contributions from an international selection of experts in the field; provides a thorough introduction and overview of existing technologies in grids, clouds and virtualization, including a brief history of the field; examines the basic requirements for performance isolation of virtual machines on multi-core servers, analyzing a selection of system virtualization technologies; examines both business and scientific applications of grids and clouds, including their use in the life sciences and for high-performance computing; explores cloud building technologies,
architectures for enhancing grid infrastructures with cloud computing, and cloud performance; discusses energy aware grids and clouds, workflows on grids and clouds, and cloud and grid programming models. This useful text will enable interested readers to familiarize themselves with the key topics of grids, clouds and virtualization, and to contribute to new advances in the field. Researchers, undergraduate and graduate students, system designers and programmers, and IT policy makers will all benefit from the material covered.

A Networking Approach to Grid Computing - Daniel Minoli 2004-11-19
Explores practical advantages of Grid Computing and what is needed by an organization to migrate to this new computing paradigm. This self-contained reference makes both the concepts and applications of grid computing clear and understandable to even non-technical managers. Explains the underlying networking mechanism and answers such questions critical to the business enterprise as "What is grid computing?" "How widespread is its present/potential penetration?" "Is it ready for prime time?" "Are there firm standards?" "Is it secure?" "How do we bill this new product?" and "How can we deploy it (at a macro level)?"

Introduction to Grid Computing - Bart Jacob 2005-01-01

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.

Computing Networks - Pascale Vicat-Blanc 2013-02-04 “Computing Networks” explores the core of the new distributed computing infrastructures we are using today: the networking systems of clusters, grids, and clouds. It helps network designers and distributed-application developers and users to better understand the technologies, specificities, constraints, and benefits of these different infrastructures’ communications systems. Cloud Computing will give the possibility for millions of users to process data anytime, anywhere, while being eco-friendly. In order to deliver this emerging traffic in a timely, cost-efficient, energy-efficient, and reliable manner over long-distance networks, several issues such as quality of service, security, metrology, network-resource scheduling and virtualization are being investigated since 15 years. “Computing Networks” explores the core of clusters, grids and clouds networks, giving designers, application developers and users the keys to better construct and use these powerful infrastructures.

Grid Computing - Soha Maad 2012-05-16 Grid research, rooted in distributed and high-performance computing, started in mid-to-late 1990s. Soon afterwards, national and international research and development authorities realized the importance of the Grid and gave it a primary position on their research and development agenda. The Grid evolved from tackling data and compute-intensive problems, to addressing global-scale scientific projects, connecting businesses across the supply chain, and...
becoming a World Wide Grid integrated in our daily routine activities. This book tells the story of great potential, continued strength, and widespread international penetration of Grid computing. It overviews latest advances in the field and traces the evolution of selected Grid applications. The book highlights the international widespread coverage and unveils the future potential of the Grid.

The Savvy Guide to HPC, Grid, Data Grid, Virtualisation and Cloud Computing - Adam Vile 2008-12-01 This book is a guide for professionals, explaining the Grid, Data Grid, Caching, Virtualisation and Cloud Computing Landscape in a no-nonsense, informative manner. The focus is on the overall picture of all the technologies, how they overlap, their real world use, their patterns of use, and what commercial and open-source products are available.

Advances on P2P, Parallel, Grid, Cloud and Internet Computing - Leonard Barolli 2019-10-20 This book presents the latest research findings, innovative research results, methods and development techniques related to P2P, grid, cloud and Internet computing from both theoretical and practical perspectives. It also reveals the synergies among such large-scale computing paradigms. P2P, grid, cloud and Internet computing technologies have rapidly become established as breakthrough paradigms for solving complex problems by enabling aggregation and sharing of an increasing variety of distributed computational resources at large scale. Grid computing originated as a paradigm for high-performance computing, as an alternative to expensive supercomputers through different forms of large-scale distributed computing. P2P computing emerged as a new paradigm after client-server and web-based computing and has proved useful in the development of social networking, B2B (business to business), B2C (business to consumer), B2G (business to government), and B2E (business to employee). Cloud computing has been defined as a “computing paradigm where the boundaries of computing are determined by economic rationale rather than technical limits,” and it has fast become a computing paradigm with applicability and adoption in all application domains and which provides utility computing at a large scale. Lastly, Internet computing is the basis of any large-scale distributed computing paradigms; it has developed into a vast area of flourishing fields with enormous impact on today’s information societies, and serving as a universal platform comprising a large variety of computing forms such as grid, P2P, cloud and mobile computing.

The Grid - Ian Foster 2004 "The Grid" is an emerging infrastructure that will fundamentally change the way people think about and use computing. The editors reveal the revolutionary impact of large-scale resource sharing and virtualization within science and industry, and the intimate relationships between organization and resource sharing structures.

Programming Windows Azure - Sriram Krishnan 2010-05-07 Learn the nuts and bolts of cloud computing with Windows Azure, Microsoft’s new Internet services platform. Written by a key member of the product development team, this book shows you how to build, deploy, host, and manage applications using Windows Azure’s programming model and essential storage services. Chapters in Programming Windows Azure are organized to reflect the platform’s buffet of services. The book’s first half focuses on how to write and host application code on Windows Azure, while the second half explains all of the options you have for storing and accessing data on the platform with high scalability and reliability. Lots of code samples and screenshots are available to help you along the way. Learn how to build applications using the Windows Azure toolset. Discover how Windows Azure works under the hood, and learn the how and the why behind several features. Choose to write application code in .NET or other languages such as C/C++, PHP, or Ruby. Understand the various options for managing your service. Get up to speed on Azure’s storage services, including blobs, queues, and tables. Build a secure backup system, and learn about cloud application security, cryptography, and performance.

TORUS 1 - Toward an Open Resource Using Services - Dominique Laffly 2020-04-09 This book, presented in three volumes, examines environmental disciplines in relation to major players in contemporary science: Big Data,
artificial intelligence and cloud computing. Today, there is a real sense of urgency regarding the evolution of computer technology, the ever-increasing volume of data, threats to our climate and the sustainable development of our planet. As such, we need to reduce technology just as much as we need to bridge the global socio-economic gap between the North and South; between universal free access to data (open data) and free software (open source). In this book, we pay particular attention to certain environmental subjects, in order to enrich our understanding of cloud computing. These subjects are: erosion; urban air pollution and atmospheric pollution in Southeast Asia; melting permafrost (causing the accelerated release of soil organic carbon in the atmosphere); alert systems of environmental hazards (such as forest fires, prospective modeling of socio-spatial practices and land use); and web fountains of geographical data. Finally, this book asks the question: in order to find a pattern in the data, how do we move from a traditional computing model-based world to pure mathematical research? After thorough examination of this topic, we conclude that this goal is both transdisciplinary and achievable.

Cloud Computing - Nikos Antonopoulos 2010-07-16 Cloud computing continues to emerge as a subject of substantial industrial and academic interest. Although the meaning and scope of “cloud computing” continues to be debated, the current notion of clouds blurs the distinctions between grid services, web services, and data centers, among other areas. Clouds also bring considerations of lowering the cost for relatively bursty applications to the fore. Cloud Computing: Principles, Systems and Applications is an essential reference/guide that provides thorough and timely examination of the services, interfaces and types of applications that can be executed on cloud-based systems. The book identifies and highlights state-of-the-art techniques and methods for designing cloud systems, presents mechanisms and schemes for linking clouds to economic activities, and offers balanced coverage of all related technologies that collectively contribute towards the realization of cloud computing. With an emphasis on the conceptual and systemic links between cloud computing and other distributed computing approaches, this text also addresses the practical importance of efficiency, scalability, robustness and security as the four cornerstones of quality of service. Topics and features: explores the relationship of cloud computing to other distributed computing paradigms, namely peer-to-peer, grids, high performance computing and web services; presents the principles, techniques, protocols and algorithms that can be adapted from other distributed computing paradigms to the development of successful clouds; includes a Foreword by Professor Mark Baker of the University of Reading, UK; examines current cloud-practical applications and highlights early deployment experiences; elaborates the economic schemes needed for clouds to become viable business models. This book will serve as a comprehensive reference for researchers and students engaged in cloud computing. Professional system architects, technical managers, and IT consultants will also find this unique text a practical guide to the application and delivery of commercial cloud services. Prof. Nick Antonopoulos is Head of the School of Computing, University of Derby, UK. Dr. Lee Gillam is a Lecturer in the Department of Computing at the University of Surrey, UK.

Grid and Cloud Computing: Concepts and Practical Applications - F. Carminati 2016-05-31 The distributed computing infrastructure known as ‘the Grid’ has undoubtedly been one of the most successful science-oriented large-scale IT projects of the past 20 years. It is now a fully operational international entity, encompassing several hundred computing sites on all continents and giving access to hundreds of thousands of CPU (central processing unit) cores and hundreds of petabytes of storage, all connected by robust national and international scientific networks. It has evolved to become the main computational platform many scientific communities. This book presents lectures from the Enrico Fermi International School of Physics summer school Grid and Cloud computing: Concepts and Practical Applications, held in Varenna, Italy, in July 2014. The school aimed to cover the conceptual and practical aspects of both the Grid and Cloud computing. The proceedings included here are divided into eight chapters, with chapters 1, 2, 3 and 8 covering general applications of Grid and Cloud computing in various scientific fields, while chapters 4, 5, 6 and 7 discuss specific technical areas of Grid and Cloud structures. The book will be of interest to all those whose work involves the use of the Grid or Cloud computing.

Grid and Distributed Computing - Tai-hoon Kim 2011-11-29 This book constitutes the refereed proceedings of the International Conference, GDC...
Grid and Cloud Database Management - Sandro Fiore 2011-07-28 Since the 1990s Grid Computing has emerged as a paradigm for accessing and managing distributed, heterogeneous and geographically spread resources, promising that we will be able to access computer power as easily as we can access the electric power grid. Later on, Cloud Computing brought the promise of providing easy and inexpensive access to remote hardware and storage resources. Exploiting pay-per-use models and virtualization for resource provisioning, cloud computing has been rapidly accepted and used by researchers, scientists and industries. In this volume, contributions from internationally recognized experts describe the latest findings on challenging topics related to grid and cloud database management. By exploring current and future developments, they provide a thorough understanding of the principles and techniques involved in these fields. The presented topics are well balanced and complementary, and they range from well-known research projects and real case studies to standards and specifications, and non-functional aspects such as security, performance and scalability. Following an initial introduction by the editors, the contributions are organized into four sections: Open Standards and Specifications, Research Efforts in Grid Database Management, Cloud Data Management, and Scientific Case Studies. With this presentation, the book serves mostly researchers and graduate students, both as an introduction to and as a technical reference for grid and cloud database management. The detailed descriptions of research prototypes dealing with spatiotemporal or genomic data will also be useful for application engineers in these fields.

GRID AND CLUSTER COMPUTING - C. S. R. PRABHU 2008-02-14 Grid Computing and Cluster Computing are advanced topics and latest trends in computer science that find a place in the computer science and information technology curricula of many engineering institutes and universities today. Divided into two parts—Part I, Grid Computing and Part II, Cluster Computing—, this compact and concise text strives to make the concepts of grid computing and cluster computing comprehensible to the students through its fine presentation and accessible style. Part I of the book enables the student not only to understand the concepts involved in grid computing but also to build their own grids for specific applications. Similarly, as today supercomputers are being built using cluster computing architectures, Part II provides an insight into the basic principles involved in cluster computing and equips the readers with the knowledge to build their own clusters in-house. Diagrams are used to illustrate the concepts discussed and to enable the reader to actually construct a grid or a cluster himself. The book is intended as a text for undergraduate and postgraduate students of computer science and engineering, information technology (B.Tech./M.Tech. Computer Science and Engineering/IT), and post-graduate students of computer science/information technology (M.Sc. Computer Science and M.Sc. IT). Besides, practising engineers and computer science professionals should find the text very useful.
Introduction to Grid Computing - Frederic Magoules 2009-03-27

A thorough overview of the next generation in computing poised to follow in the footsteps of the Internet, grid computing is on the verge of becoming more robust and accessible to the public in the near future. Focusing on this novel, yet already powerful, technology, Introduction to Grid Computing explores state-of-the-art grid projects, core grid.

Distributed Computing and Networking - Davide Frey 2013-01-05

This book constitutes the refereed proceedings of the 14th International Conference on Distributed Computing and Networking, ICDCN 2013, held in Mumbai, India, during January 3-6, 2013. The 27 revised full papers, 5 short papers presented together with 7 poster papers were carefully reviewed and selected from 149 submissions. The papers cover topics such as distributed algorithms and concurrent data structures; integration of heterogeneous wireless and wired networks; distributed operating systems; internetworking protocols and Internet applications; distributed database systems; mobile and pervasive computing, context-aware distributed systems; embedded distributed systems; next generation and converged network architectures; experiments and performance evaluation of distributed systems; overlay and peer-to-peer networks and services; fault-tolerance, reliability, and availability; home networking and services; multiprocessor and multi-core architectures and algorithms; resource management and quality of service; self-organization, self-stabilization, and autonomic computing; network security and privacy; high performance computing, grid computing, and cloud computing; energy-efficient networking and smart grids; security, cryptography, and game theory in distributed systems; sensor, PAN and ad-hoc networks; and traffic engineering, pricing, network management.

Guide to Cloud Computing for Business and Technology Managers - Vivek Kale 2014-12-17

Guide to Cloud Computing for Business and Technology Managers: From Distributed Computing to Cloudware Applications unravels the mystery of cloud computing and explains how it can transform the operating contexts of business enterprises. It provides a clear understanding of what cloud computing really means, what it can do, and when it is practical to use. Addressing the primary management and operation concerns of cloudware, including performance, measurement, monitoring, and security, this pragmatic book: Introduces the enterprise applications integration (EAI) solutions that were a first step toward enabling an integrated enterprise Details service-oriented architecture (SOA) and related technologies that paved the road for cloudware applications Covers delivery models like IaaS, PaaS, and SaaS, and deployment models like public, private, and hybrid clouds Describes Amazon, Google, and Microsoft cloudware solutions and services, as well as those of several other players Demonstrates how cloud computing can reduce costs, achieve business flexibility, and sharpen strategic focus Unlike customary discussions of cloud computing, Guide to Cloud Computing for Business and Technology Managers: From Distributed Computing to Cloudware Applications emphasizes the key differentiator—that cloud computing is able to treat enterprise-level services not merely as discrete stand-alone services, but as Internet-locatable, composable, and repackageable building blocks for generating dynamic real-world enterprise business processes.

Smart Grid Technology - Sudip Misra 2018-07-12

Discusses concepts of smart grid technologies, from the perspective of integration with cloud computing and data management approaches.

Grid Computing: Software Environments and Tools - Jose Cardoso Cunha 2007-07-03

Grid Computing requires the use of software that can divide and farm out pieces of a program to as many as several thousand computers. This book explores processes and techniques needed to create a successful Grid infrastructure. Leading researchers in Europe and the US look at the development of specialist tools and environments which will encourage the convergence of the parallel programming, distributed computing and data management communities. Specific topics covered include: An overview of structural and behavioural properties of Computer Grid applications Discussion of alternative programming techniques Case studies displaying the potential of Computer Grids in solving real problems This book is unique in its outline of the needs of Computational Grids both...
in integration of high-end resources using OGSA/Globus, and the loose integration of Peer-2-Peer/Entropia/United Devices. Readers will gain an insight on the limitations of existing approaches as well as the standardisation activities currently taking place.

**Distributed Data Management for Grid Computing** - Michael Di Stefano
2005-09-15 Discover grid computing—how to successfully build, implement, and manage widely distributed computing architecture. With technology budgets under increasing scrutiny and system architecture becoming more and more complex, many organizations are rethinking how they manage and use technology. Keeping a strong business focus, this publication clearly demonstrates that the current ways of tying applications to dedicated hardware are no longer viable in today’s competitive, bottom line-oriented environment. This evolution in distributed computing is leading to a paradigm shift in leveraging widely distributed architectures to get the most processing power per IT dollar. Presenting a solid foundation of data management issues and techniques, this practical book delves into grid architecture, services, practices, and much more, including: * Why businesses should adopt grid computing * How to master the fundamental concepts and programming techniques and apply them successfully to reach objectives * How to maximize the value of existing IT investments. The author has tailored this publication for two distinct audiences. Business professionals will gain a better understanding of how grid computing improves productivity and performance, what impact it can have on their organization’s bottom line, and the technical foundations necessary to discuss grid computing with their IT colleagues. Following the author’s expert guidance and practical examples, IT professionals, architects, and developers will be equipped to initiate and carry out successful grid computing projects within their own organizations.

**Cloud Computing** - Nick Antonopoulos
2017-06-06 This practically-focused reference presents a comprehensive overview of the state of the art in Cloud Computing, and examines the potential for future Cloud and Cloud-related technologies to address specific industrial and research challenges. This new edition explores both established and emergent principles, techniques, protocols and algorithms involved with the design, development, and management of Cloud-based systems. The text reviews a range of applications and methods for linking Clouds, undertaking data management and scientific data analysis, and addressing requirements both of data analysis and of management of large scale and complex systems. This new edition also extends into the emergent next generation of mobile telecommunications, relating network function virtualization and mobile edge Cloud Computing, as supports Smart Grids and Smart Cities. As with the first edition, emphasis is placed on the four quality-of-service cornerstones of efficiency, scalability, robustness, and security.

**Cloud Computing** - Rajkumar Buyya
2010-12-17 The primary purpose of this book is to capture the state-of-the-art in Cloud Computing technologies and applications. The book will also aim to identify potential research directions and technologies that will facilitate creation a global marketplace of cloud computing services supporting scientific, industrial, business, and consumer applications. We expect the book to serve as a reference for a larger audience such as systems architects, practitioners, developers, new researchers, and graduate level students. This area of research is relatively recent, and as such has no existing reference book that addresses it. This book will be a timely contribution to a field that is gaining considerable research interest, momentum, and is expected to be of increasing interest to commercial developers. The book is targeted for professional computer science developers and graduate students especially at Masters level. As Cloud Computing is recognized as one of the top five emerging technologies that will have a major impact on the quality of science and society over the next 20 years, its knowledge will help position our readers at the forefront of the field.