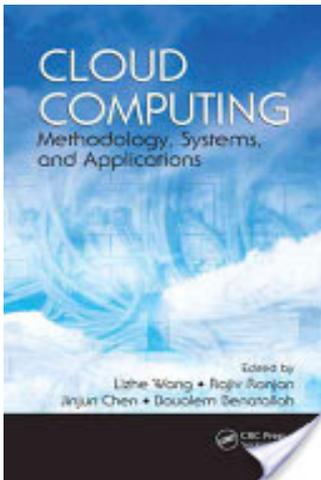# Cloud Computing: Methodology, Systems, and Applications

- **Author : Pierre Puiseux**
- **Publisher : CRC Press, 2011**
- **pages : 844 pages**
- **N° Class : 621/473**

Cloud computing has created a shift from the use of physical hardware and locally managed software-enabled platforms to that of virtualized cloud-hosted services. Cloud assembles large networks of virtual services, including hardware (CPU, storage, and network) and software resources (databases, message queuing systems, monitoring systems, and load-balancers).

As Cloud continues to revolutionize applications in academia, industry, government, and many other fields, the transition to this efficient and flexible platform presents serious challenges at both theoretical and practical levels—ones that will often require new approaches and practices in all areas. Comprehensive and timely, Cloud Computing: Methodology, Systems, and Applications summarizes progress in state-of-the-art research and offers step-by-step instruction on how to implement it.

Summarizes Cloud Developments, Identifies Research Challenges, and Outlines Future Directions

Ideal for a broad audience that includes researchers, engineers, IT professionals, and graduate students, this book is designed in three sections:

- Fundamentals of Cloud Computing: Concept, Methodology, and Overview
- Cloud Computing Functionalities and Provisioning
- Case Studies, Applications, and Future Directions

It addresses the obvious technical aspects of using Cloud but goes beyond, exploring the cultural/social and regulatory/legal challenges that are quickly coming to the forefront of discussion. Properly applied as part of an overall IT strategy, Cloud can help small and medium business enterprises (SMEs) and governments in optimizing expenditure on application-hosting infrastructure. This material outlines a strategy for using Cloud to exploit opportunities in areas including, but not limited to, government, research, business, high-performance computing, web hosting, social networking, and multimedia.

With contributions from a host of internationally recognized researchers, this reference delves into everything from necessary changes in users' initial mindset to actual physical requirements for the successful integration of Cloud into existing in-house infrastructure. Using case studies throughout to reinforce concepts, this book also addresses recent advances and future directions in methodologies, taxonomies, IaaS/SaaS, data management and processing, programming models, and applications.