

Preface

The research of distributed systems encompasses many areas of computer science and engineering and is among the fastest growing subjects in the last decade. The computing trend that processor technology, driven by the Moor's Law, hits performance and power walls, and cloud computing permeates into every aspect of our life, dramatically changes the landscape of computing, making parallel and distributed computing a key norm of the computer science and engineering discipline. There is a paradigm shift that local computers no longer have to do all the heavy lifting. Instead, due to the technology advance of networking and virtualization, applications become “services” that can be purchased on demand. The emerging cloud computing model leverages remote hardware and software resources, and fuels rapid application development innovation with highly scalable and efficient computing infrastructure. Since cloud features resource provisioning elasticity, computing and storage can be packaged as metered services, known as utility computing. There is no doubt that cloud and utility computing will be one of the key driving forces to transform the entire computing industry.

Designing efficient resource management strategies is among the key issues in a cloud and utility computing environment. The introduction of socioeconomic approaches into distributed computing research opens tremendous research opportunities. This book presents cost-effective resource management strategies in cloud and utility computing, based on Dr. Han Zhao's doctoral research (*Zhao, H: Exploring Cost-Effective Resource Management Strategies in the Age of Utility Computing, Ph.D. dissertation, Department of Computer and Information Science and Engineering, University of Florida (2013)*). We have further extended the content to cover additional aspects in the field that we feel are relevant and interesting. We hope this book will help facilitate your understanding of this interesting subject.

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