

1. Record Nr.	UNINA9910812737203321
Autore	Xiong Kaiqi
Titolo	Resource optimization and security for cloud services // Kaiqi Xiong ; series editor, Harry Perros
Pubbl/distr/stampa	London ; ; Hoboken, New Jersey : , : ISTE : , : Wiley, , 2014 ©2014
ISBN	1-118-89859-1 1-118-89876-1
Descrizione fisica	1 online resource (208 p.)
Collana	Networks and telecommunications series
Altri autori (Persone)	PerrosHarry
Disciplina	005.8
Soggetti	Cloud computing - Security measures
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Contents; Preface; Chapter 1. Introduction; 1.1. Motivation; 1.2. The problems; 1.3. Summary of contributions; 1.4. The organization of this book; Chapter 2. Current Approaches for Resource Optimization and Security; 2.1. Service availability; 2.2. Trustworthiness; 2.3. Performance; 2.4. The resource optimization problem subject to an SLA; 2.5. Public-key cryptography-based authentication; Chapter 3. Single Class Customers; 3.1. The percentile of response time; 3.2. A resource optimization problem for service models with single-class customers 3.3. Approaches for the resource optimization 3.4. Numerical validations; 3.5. The balanced condition; 3.6. Services Performance Modeling and Analysis in a Simple Scenario of Cloud Computing; 3.6.1. Overview; 3.6.2. A computer service performance model; 3.6.3. A numerical validation; 3.6.4. Discussions; 3.7. Concluding remarks; Chapter 4. Multiple-Class Customers; 4.1. The SLA performance metric in the case of multiple class customers; 4.2. The resource optimization problem for multiple customer services; 4.2.1. Resource optimization problem for multiple class customers 4.3. Approaches for resource optimization 4.3.1. The LSTs of response time distributions for two priority customers; 4.3.2. Algorithms for the resource optimization problem; 4.4. Numerical validations; 4.5. Concluding remarks; Chapter 5. A Trustworthy Service Model; 5.1. The

trust-based resource optimization problem; 5.2. A framework for solving the trust-based resource provisioning problem; 5.3. The calculation of SLA metrics; 5.3.1. The trustworthiness of resource sites; 5.3.2. The percentile response time; 5.3.3. The service availability 5.4. An approach for solving the trust-based resource provisioning problem 5.4.1. Single-class customers; 5.4.2. Multiple priority customers; 5.5. Numerical examples; 5.5.1. Single-class customers; 5.5.2. Multiple priority customers; 5.6. Concluding remarks; Chapter 6. Performance Analysis of Public-Key Cryptography-Based Group Authentication; 6.1. Public-key cryptography-based authentication; 6.2. PKCROSS and PKTAPP; 6.2.1. Protocol analysis; 6.2.2. The calculation of the response time via queuing networks; 6.3. A new group authentication technique using public-key cryptography 6.3.1. A single remote realm 6.3.2. Multiple remote realms; 6.4. Performance evaluation of the new proposed technique; 6.4.1. The operations of encryption and decryption; 6.4.2. The calculation of the response time via a queuing network; 6.4.3. Discussions; 6.5. Concluding remarks; Chapter 7. Summary and Future Work; 7.1. Research summary of the book; 7.2. Future research directions; Bibliography; Index

Sommario/riassunto

This book includes a study of trustworthiness, percentile response time, service availability, and authentication in the networks between users and cloud service providers, and at service stations or sites that may be owned by different service providers. The first part of the book contains an analysis of percentile response time, which is one of the most important SLA (service level agreements) metrics. Effective and accurate numerical solutions for the calculation of the percentile response time in single-class and multi-class queueing networks are obtained. Then, the numerical solution i
