

Foreword

As more aspects of our work and life move online and the Web expands beyond a communication medium to become a platform for business and society, Content Delivery Networks (CDNs) have recently gained momentum in the Internet computing landscape. The integration of existing emerging as well as stable technologies, such as Peer-to-Peer, Grid, and the latest IT trend—Cloud computing opens new perspectives in Internet technologies, raising new issues in the architecture, design, and implementation of existing CDNs. The rapid proliferation of next-generation content delivery infrastructures has the potential to change radically the way computer applications and services are constructed, managed, and delivered.

In the last few years there have been an increasing number of initiatives to develop next-generation content delivery infrastructures. The key driving forces behind this trend includes the ubiquity of broadband and wireless networking, the falling cost of storage, the overcapacity of today's large corporate data centers and progressive improvements in networking technologies. In this context, adaptive Content Networks for media streaming, mobile dynamic CDNs, Content Clouds, QoS-based resource management, and SLA-based allocation policies have been developed. There is also considerable investment in this field from commercial CDN providers such as Akamai, Limelight Networks, Mirror-Image, Savvis, and Edgestream as well as academic bodies such as CoDeeN (Princeton University, USA), Coral CDN (New York University, USA), MetaCDN (University of Melbourne, Australia) and Globule (Vrije University, The Netherlands).

The current volume is a major contribution in the field of content delivery networking, opening new perspectives with profound implications. It presents many of the most relevant current development and research results in a coherent and self contained manner. Each chapter is accompanied by examples or case studies to show the applicability of the described techniques or methodologies. What I really like in this book is that each chapter balances the theoretical and practical aspects very well. The content flow is natural and easy to read by a wide range of audiences including undergraduate university students, postgraduate students, and research engineers.

Regarding its content, the book provides exhaustive coverage of the most important fundamental issues related to the next-generation content delivery infrastructures such as CDN modeling and performance, peer-to-peer streaming, broadcasting media content in urban environments, parallel transport mechanisms, structured peer-to-peer database systems, SLA policies for CDNs, and wireless multimedia communications. It also provides interesting insights on the most relevant applications such as video production and distribution, media delivery services, content delivery clouds and mobile agent-based services. Overall, the broad range of topics of the present book makes it an important reference on the area of content delivery networking.

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