



Content Networking: Architecture, Protocols, and Practice

By Markus Hofmann, *Director at Bell Labs Research/Lucent Technologies*
and Leland Beaumont, *Consultant*

"This book is an invaluable resource for anyone interested in understanding the rationale and technology driving the evolution of the Web. I especially liked the way the authors tie together the various elements and protocols that make up content distribution systems over the Web."

—Prof. Dr. Ralf Steinmetz, Head of Multimedia Communications Lab (KOM),
Darmstadt University of Technology, Germany

"Finally, there is a comprehensive and authoritative text on all aspects of content delivery networking—the true Intelligent Network of the Internet! I will certainly use this book in teaching graduate students."

—Igor Faynberg, Technical Manager, Internet Standards, Bell Labs/Lucent Technologies,
and Adjunct Professor of Computer Science, Stevens Institute of Technology

"This book closes a major gap in current literature: it gives a comprehensive overview of all aspects of content delivery networks. It is easy to read, yet provides an in-depth understanding of the algorithms and communication protocols involved."

—Prof. Dr. Wolfgang Effelsberg, University of Mannheim, Director, Computer Networks and Multimedia Technology Research Group

As the Internet has grown, so have the challenges associated with delivering static, streaming, and dynamic content to end-users. This book is unique in that it addresses the topic of content networking exclusively and comprehensively, tracing the evolution from traditional web caching to today's open and vastly more flexible architecture. With this evolutionary approach, the authors emphasize the field's most persistent concepts, principles, and mechanisms—the core information that will help you understand why and how content delivery works today, and apply that knowledge in the future.

Features

- Focuses on the principles that will give you a deep and timely understanding of content networking.
- Offers dozens of protocol-specific examples showing how real-life Content Networks are currently designed and implemented.
- Provides extensive consideration of Content Services, including both the Internet Content Adaptation Protocol (ICAP) and Open Pluggable Edge Services (OPES).
- Examines methods for supporting time-constrained media such as streaming audio and video and real-time media such as instant messages.
- Combines the vision and rigor of a prominent researcher with the practical experience of a seasoned development engineer to provide a unique combination of theoretical depth and practical application.

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ABOUT THE AUTHORS

Markus Hofmann is Director of Services Infrastructure Research at Bell Labs/Lucent Technologies. He holds a Ph.D. in Computer Engineering from University of Karlsruhe, Germany, and is known for his pioneering work on Internet multicasting and Content Networking. He serves as Chair of the Open Pluggable Edge Services (OPES) Working Group in the IETF, was recently elected Chair of the Internet Technical Committee (ITC), and serves on the editorial board of the Computer Communications Journal.

Leland Beaumont is a consultant focusing on quality management and new product development. Previously, he was responsible for specification and verification of content delivery products at Lucent. After graduating with highest honors from Lehigh University, he received his Master's Degree in Electrical Engineering from Purdue University. He has worked in the data communications product development industry for over 30 years.