
Introduction

Crossroads Networking and Distributed Systems edition

by [Kevin Fu](#)

The Web is one of the most widely-used distributed systems in the world. The secret to the domination of the web is simplicity. The protocol for communicating on the Web (HTTP) specifies three important methods: GET, HEAD, and POST. These three methods promote the Web as a vast medium for easily sharing information. Like Conway's Game of Life, HTTP produces a complex system from a few simple methods. (For information on Conway's Game of Life, see the list of links at http://www.yahoo.com/Science/Artificial_Life/Conway_s_Game_of_Life)

However, the Web is quickly departing from simplicity. The original HTTP/0.9 could be described in just a couple of pages [1]. The first precisely specified version, HTTP/1.0, fills 60 pages in an Internet Request for Comments [2]. Now HTTP/1.1 boasts 160 pages of specifications [3]. Furthermore, active components created using systems or technologies such as Java and ActiveX add more complexity to the Web. How much longer will the Web remain the dominant system to share information? Until something simpler and better comes along.

This issue of *Crossroads* offers a smorgasbord of articles dealing with networking and distributed systems, ranging from cryptography to academic publishing. We have seven articles in addition to our regular columns.

Larry Chen makes a case for agent-based communication over conventional client/server communication in ``AgentOS: The Agent-based Distributed Operating System for Mobile Networks."

With the tremendous growth of digital information, users require specialized systems to store and retrieve information. James Richvalsky and David Watkins offer practical advice on building a digital library in ``Design and Implementation of a Digital Library."

Consumers are finally taking security more seriously. Unfortunately, laws in the U.S. prevent consumers from easily protecting their privacy with strong cryptography. Robert Schlaff harvests an explanation of chaffing and winnowing in ``Confidentiality Using Authentication." This creative method shows that freely exportable authentication can provide for confidentiality.

Peggy Wright discusses methods to extract meaningful information from large amounts of data in ``Knowledge Discovery in Databases: Tools & Techniques."

Also in this issue, Kai Larsen addresses the ``publish or perish" attitude in ``The Damocles Sword of Academic Publishing: Sharper Students or Duller Sword in the MIS Field?" Finally, Shawn Brown talks about high-speed Internet access in ``ADSL Forum Web Site Review."

Next issue (coming in March 1999): Computer Architectures

References

1

Berners-Lee, T. *The Original HTTP as Defined in 1991* <http://www.w3.org/Protocols/HTTP/AsImplemented.html>

2

Berners-Lee, T. et al. *Hypertext Transfer Protocol -- HTTP/1.0* <http://web.mit.edu/rfc/rfc1945.txt>

3

Fielding, R. et al. *Hypertext Transfer Protocol -- HTTP/1.1* <http://web.mit.edu/rfc/rfc2068.txt>

[Kevin Fu](#) is a graduate student in Computer Science at MIT. His interests include security and computer systems. Currently he is writing his Master's thesis on cryptographic storage file systems at Bellcore. Kevin also spends lots of time with the National Senior Classical League, an organization dedicated to the study of Latin and the Classics.