063 062

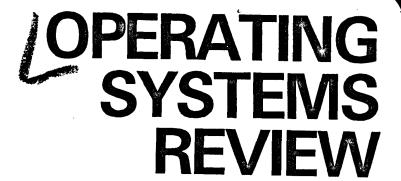
30

UNIVERSITY OF WASHINGTON

DEC 20 1996

WIDING THE P





59

A Publication of the Association for Computing Machinery Special Interest Group on Operating Systems

Volume 30

Special Issue

1996

Proceedings of the

Second USENIX Symposium on Operating Systems Design and Implementation (OSDI)

Octob

ENGINEERING LIBRARY DISPLAY PERIODICAL Non-circulating until:

JAN 2 2 1997



Exablaze - Ex. 1004

OPERATING SYSTEMS REVIEW

A Publication of the ACM Special Interest Group on Operating Systems

Chairperson

Carla Ellis
Dept. of Computer Science
D308 Levine Science Research Center
Duke University B90129
Durham NC 27708-0129 USA
(919)660-6523
(carla@cs.duke.edu)

Secretary-Treasurer

Paul J. Leach
Microsoft
1 Microsoft Way
Redmond WA 98052, USA
(206) 936-4765
(paulle@microsoft.com)

V. Chairperson

Marc Shapiro
INRIA Rocquencourt
Domaine de Voluceau
B.P. 105
78153 Le Chesnay Cedex France
+33 (1) 39-63-53-25
(Marc.Shapiro@inria.fr)

Newsletter Editor

William M. Waite
Dept. of Electrical and
Computer Engineering 425
University of Colorado
Boulder, CO 80309-0425 USA
(303) 492-7204
(waite@cs.colorado.edu)

OPERATING SYSTEMS REVIEW is an informal publication of the ACM Special Interest Group on Operating Systems (SIGOPS), whose scope of interest includes: Computer operating systems and architecture for multiprogramming, multiprocessing, and time sharing; resource management; evaluation and simulation; reliability, integrity, and security of data; communications among computing processors; and computer system modeling analysis.

Membership in SIGOPS (at \$15 per annum) is open to ACM members and associate members, and student members (at \$8 per annum); non-ACM members may join also (at \$42 per annum). Non-members of SIGOPS may subscribe to OPERATING SYSTEMS REVIEW at \$30 per year. All SIGOPS members receive OPERATING SYSTEMS REVIEW.

SIGOPS membership application forms are available from ACM Headquarters (or see back cover of this issue), 1515 Broadway, 17th Floor, New York, New York 10036, telephone (212) 869-7440. Changes of address and other matters pertaining to the SIGOPS mailing list should be directed to ACM Headquarters, not to any of the SIGOPS officers.

Contributions to OSR are sent to the editor and should be single spaced and printed on one side of the paper only. Text and diagrams must be contained within a 6½ inch wide by 8½ inch high (165mm by 216mm) area with at least one inch (25mm) top and side margins, 1½ inch (38mm) bottom margin, and be camera-ready (i.e., be an original having sufficient contrast and density for reproduction). All letters to the editor will be considered for publication unless accompanied by a request to the contrary. Except for editorial items, all sources of material appearing in OPERATING SYSTEMS REVIEW will be clearly identified. Items attributed to individuals will ordinarily be interpreted as personal rather than organizational opinions. The technical material in this newsletter is not refereed. Deadlines for submitting material are the 15th of February, May, August, and November. The SIGOPS conference proceedings will be mailed as the December issue in odd numbered calendar years, and the ASPLOS conference proceedings will be mailed in even numbered calendar years.

OPERATING SYSTEMS REVIEW (ISSN 0163-5980) is published five times a year (January, April, July, October and December) by the Association for Computing Machinery Inc., 1515 Broadway, New York, NY 10036. Periodicals postage paid at New York, NY 10001, and at additional mailing offices. POSTMASTER: Send address changes to OPERATING SYSTEMS REVIEW, ACM, 1515 Broadway, New York, NY 10036.

Subscriptions: Annual subscription cost of \$12.53 is included in the member dues of \$15.00 (for students



The USENIX Association

Proceedings of the Second Symposium on Operating Systems Design and Implementation (OSDI '96)

Co-sponsored by ACM SIGOPS and IEEE TCOS

October 28-31, 1996



For additional copies of these proceedings contact:

USENIX Association 2560 Ninth Street, Suite 215 Berkeley, CA 94710 USA Phone: 510 528 8649 FAX: 510 548 5738

Email: office@usenix.org URL: http://www.usenix.org

The price is \$20 for members and \$27 for nonmembers.

Outside the U.S.A. and Canada, please add
\$11 per copy for postage (via air printed matter).

Past OSDI Proceedings

\$20/27

OSDI '94 (First) November, 1994 Monterey, California

1996 © Copyright by The USENIX Association All Rights Reserved.

ISBN 1-880446-82-0

Printed in the United States of America on 50% recycled paper, 10-15% post consumer waste.

This volume is published as a collective work. Rights to individual papers remain with the author or the author's employer. Permission is granted for the noncommercial reproduction of the complete work for educational or research purposes. USENIX acknowledges all trademarks herein.



CONTENTS

Message from the Program Chairs
External Referees
Author Index vii
Tuesday, October 29
Opening Remarks and Awards Presentation Karin Petersen, Xerox PARC; Willy Zwaenepoel, Rice University
Invited Talk: Java OS: Back to the Future
Caching And Prefetching in I/O Systems
Automatic Compiler-Inserted I/O Prefetching for Out-Of-Core Applications
A Trace-Driven Comparison of Algorithms for Parallel Prefetching and Caching
Efficient Cooperative Caching Using Hints
Distributed Shared Memory
Online Data-Race Detection via Choherency Guarantees
Lightweight Logging for Lazy Release Consistent Distributed Shared Memory
Performance Evaluation of Two Home-Based Lazy Release Consistency Protocols for Shared
Virtual Memory Systems
Wednesday, October 30
Invited Talk: Active Networks
Scheduling and Synchronization
CPU Inheritance Scheduling



DOCKET

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

