

Important OS papers



This Appendix contains important operating system papers. What makes them important? There are a variety of ways for a paper to get included in this list. Some papers contain fundamental breakthroughs in operating system design or specific operating system functional areas. Others describe research that lead the way for new areas of innovation. Some describe promising research that has not yet borne fruit. Some provided a distillation of previous work, but that distillation resulted in better understanding of operating system functionality that lead to new research or solutions. The list of important papers here is not all inclusive, of course, but tries to be a fundamental reading list for those interested in core operating systems research publications.

- Sanjay Ghemawat, Howard Gobioff, and Shun-Tak Leung “[The Google File System](#)”, *Proceedings of the Summer USENIX Conference* (1986).
- S. Baskiyar, and N. Meghanathan “[A Survey of Contemporary Real-time Operating Systems](#)” *Informatica* (2005).
- Paul Barham, Boris Dragovic, Keir Fraser, Steven Hand, Tim Harris, Alex Ho, Rolf Neugebauer, Ian Pratt, Andrew Warfield “[Xen and the Art of Virtualization](#)”, *Proceedings of the 19th ACM Symposium on Operating Systems Principles* (2003).
- Mahadev Satyanarayanan “[Mobile Computing: The Next Decade](#)”, *Proceedings of the 1st ACM Workshop on Mobile Cloud Computing and Services: Social Networks and Beyond* (2010).
- Andrew D. Birrell “[An Introduction to Programming with Threads](#)”, *Research Report 35: Digital Equipment Corporation Systems Research* (1989).
- Thomas E. Anderson, Brian N. Bershad, Edward D. Lazowska, and Henry M. Levy “[Scheduler Activations](#)”, *Proceedings of the 13th ACM Symposium on Operating Systems Principles* (1991).
- Thomas W. Doeppner “[Threads: A System for the Support of Concurrent Programming](#)”, *Brown University Technical Report* (1987).

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- Jeffrey S. Chase, Henry M. Levy, Miche Baker-harvey, and Edward D. Lazowska “How to use a 64-bit Virtual Address Space”, *University of Washington Technical Report* (1992).
- A. Bensoussan, C. T. Clingen, and R. C. Daley “The Multics Virtual Memory: Concepts and Design”, *Communications of the ACM* (1972).
- Andrew G. Birrell and Bruce J. Nelson “Implementing Remote Procedure Calls”, *ACM Transactions on Computer Systems* (1984).
- Daniel G. Bobrow, Jerry D. Burchfiel, Daniel L. Murphy, and Raymond S. Tomlinson “Tenex, a Paged Time Sharing System for the PDP-10”, *Communications of the ACM* (1972).
- David R. Cheriton, and Willy Zwaenepoel “The Distributed V Kernel”, *Proceedings of the 9th ACM Symposium on Operating Systems Principles* (1983).
- F. J. Corbato, J. H. Saltzer, and C. T. Clingen “Multics – The first seven years”, *Spring Joint Computer Conference* (1972).
- Peter J. Denning “Working Sets Past and Present”, *IEEE Transactions on Software Engineering* (1980).
- Marshall K. McKusick, William N. Joy, Samuel J. Leffler, and Robert S. Fabry “A Fast File System for UNIX”, *ACM Transactions on Computer Systems* (1984).
- Herman Hartig, Michael Hohmuth, Jochen Liedtke, Jean Wolter, and Sebastian Schonberg “The Performance of u-kernel based Systems”, *Proceedings of the 16th ACM Symposium on Operating Systems Principles* (1997).
- Per Brinch Hansen “The Nucleus of a Multiprogramming System”, *Communications of the ACM* (1970).
- C. A. R. Hoare “Monitors: an Operating System Structuring Concept”, *Communications of the ACM* (1974).
- Butler W. Lampson “Protection”, *ACM SIGOPS Operating Systems Review* (1974).
- Butler W. Lampson and David D. Redell “Experience with Processes and Monitors in Mesa”, *Communications of the ACM* (1980).
- Hugh C. Lauer and Roger M. Needham “On the Duality of Operating System Structures”, *ACM SIGOPS Operating Systems Review* (1979).
- Mike Accetta, Robert Baron, William Bolosky, David Golub, Richard Rashid, Avadis Tevanian, and Michael Young “Mach: A New Kernel Foundation for UNIX Development”, *USENIX Summer Conference* (1986).
- Richard Rashid, Robert Baron, Alessandro Forin, Ro Forin, David Golub, Michael Jones, Daniel Julin, Douglas Orr, and Richard Sanzi “Mach: A Foundation for Open Systems”, *Proceedings of the IEEE 2nd Workshop of Workstation Operating Systems* (1989).
- Marshall K. McKusick “A Brief History of the BSD Fast File System”, *LOGIN* (2007).

- John Ousterhout “Why Arent Operating Systems Getting Faster as Fast as Hardware?”, *USENIX Summer Conference* (1990).
- Peter J. Denning “The Working Set Model for Program Behavior”, *Proceedings of the ACM Symposium on Operating Systems Principles* (1967).
- Richard Rashid, Avadis Tevanian, Jr., Michael Young, David Golub, Robert Baron, David Black, William J. Bolosky, and Jonathan Chew “Machine-Independent Virtual Memory Management for Paged Uniprocessor and Multiprocessor Architectures”, *Proceedings of the 2nd International Conference on Architectural Support for Programming Languages and Operating Systems* (1987).
- W. Wulf, R. Levin, and C. Pierson “Overview of the Hydra Operating System Development”, *Proceedings of the 5th ACM Symposium on Operating Systems Principles* (1975).
- Butler W. Lampson, and Howard E. Sturgis “Reflections on Operating System Design”, *Communications of the ACM* (1976).
- Eliezer Levy, and Abraham Silberschatz “Distributed File Systems: Concepts and Examples”, *ACM Computing Surveys* (1990).
- Edsger W. Dijkstra “The Structure of the THE-Multiprogramming System”, *Communications of the ACM* (1968).
- G. Bell, D. Siewiorek, and S. H. Fuller “The Manchester Mark 1 and Atlas: A Historical Perspective”, *Communications of the ACM* (1978).
- Andrew S. Tanenbaum “Distributed Operating Systems”, *ACM Computing Surveys* (1985).
- C. G. Bell, A. Kotok, T. N. Hastings, and R. Hill “The Evolution of the DECsystem 10”, *Communications of the ACM Special Issue on Computer Architecture* (1978).
- Peter J. Denning “Principles of Computer System Organization”, *ACM SIGCSE Bulletin* (1970).
- Andrew S. Tanenbaum “Amoeba”, *Vrije Universiteit Technical Paper* (unknown).
- John A. Stankovic, and Krithi Ramamritham “The Spring Kernel: A New Paradigm for Real-Time Operating Systems”, *ACM SIGOPS Operating Systems Review* (1989).
- Richard P. Case, and Andris Padegs “Architecture of the IBM System/370”, *Communications of the ACM* (1978).
- Michael D. Schroeder, and Jerome H. Saltzer “A Hardware Architecture for Implementing Protection Rings”, *Communications of the ACM* (1972).
- Mendel Rosenblum, and John K. Ousterhout “The Design and Implementation of a Log-Structured File System”, *ACM Transactions on Computer Systems* (1992).

- Russel Sandberg, David Goldberg, Steve Kleiman, Dan Walsh, and Bob Lyon “[Design and Implementation of the Sun Network Filesystem](#)”, *Artech House, Inc.* (1998).
- Sergey Bykov, Alan Geller, Gabriel Kliot, James Larus, Ravi Pandya, and Jorgen Thelin “[Orleans: Cloud Computing for Everyone](#)”, *Proceedings of the 2nd ACM Symposium on Cloud Computing* (2011).
- Avadis Tevanian, Jr., Richard F. Rashid, David B. Golub, David L. Black, Eric Cooper, and Michael W. Young “[Mac Threads and the Unix Kernel: A Battle for Control](#)”, *Carnegie Mellon University Technical Report* (1987).
- Sunay Tripathi, Nicolas Droux, Kais Belgaied, and Shrikrishna Khare “[Crossbow Virtual Wire: Network in a Box](#)”, *Proceedings of the 23rd Conference on Large Installation System Administration* (2009).
- Bryan M. Cantrill, Michael W. Shapiro, and Adam H. Leventhal “[Dynamic Instrumentation of Production Systems](#)”, *USENIX Annual Technical Conference* (2004).
- Brian N. Bershad, Stefan Savage, Przemyslaw Paradyk, Emin Gun Sirer, Marc E. Fiuczynski, David Becker, Craig Chambers, and Susan Eggers “[Extensibility, Safety and Performance in the SPIN Operating System](#)”, *Proceedings of the 15th ACM Symposium on Operating Systems Principles* (1995).
- Frank Dabek, Emma Brunskill, M. Frans Kaashoek, David Karger, Robert Morris, Ion Stoica, and Hari Balakrishnan “[Building Peer-to-Peer Systems with Chord, a Distributed Lookup Service](#)”, *Proceedings of the 8th IEEE Workshop on Hot Topics in Operating Systems* (2001).
- Galen Hunt, James R. Larus, Martin Abadi, Mark Aiken, Paul Barham, Manuel Fahndrich, Chris Hawblitzel, Orion Hodson, Steven Levi, Nick Murphy, Bjarne Steensgaard, David Tarditi, Ted Wobber, and Brian D. Zill “[An Overview of the Singularity Project](#)”, *Microsoft Research Technical Report* (2005).
- Edmund B. Nightingale, Orion Hodson, Ross McIlroy, Chris Hawblitzel, and Galen Hunt “[Helios: Heterogeneous Multiprocessing with Satellite Kernels](#)”, *Proceedings of the ACM SIGOPS 22nd Symposium on Operating System Principles* (2009).
- John Chapin, Mendel Rosenblum, Scott Devine, Tirthankar Lahiri, Dan Teodosiu, and Anoop Gupta “[HIVE: Operating System Fault Containment for Shared-memory Multiprocessors](#)”, *Stanford University Technical Report* (1997).
- Edouard Bugnion, Scott Devine, and Mendel Rosenblum “[Disco: Running Commodity Operating Systems on Scalable Multiprocessors](#)”, *Stanford University Technical Report* (1997).
- Carl A. Waldspurger, and William E. Weihl “[Lottery Scheduling: Flexible Proportional-Share Resource Management](#)”, *Proceedings of the 1st USENIX Symposium on Operating Systems Design and Implementation* (1994).

- David A. Patterson, Garth Gibson, and Randy H. Katz “A Case for Redundant Arrays of Inexpensive Disks (RAID)”, *Proceedings of the ACM SIGMOD Conference on Management of Data* (1988).
- Leslie Lamport “Time, Clocks, and the Ordering of Events in a Distributed System”, *Communications of the ACM* (1978).
- J. Liedtke “On microkernel Construction”, *Proceedings of the 15th ACM Symposium on Operating Systems Principles* (1995).
- Jim Gray “Why Do Computers Stop and What Can Be Done About It?”, *Microsoft Research Technical Report* (1985).
- Ken Thompson “Reflections on Trusting Trust”, *Communications of the ACM* (1984).
- Jack B. Dennis, Earl C. Van Horn “Programming Semantics for Mutiprogrammed Computations”, *Communications of the ACM* (1966).
- Roger M. Needham, and Michael D. Schroeder “Using Encryption for Authentication in Large Networks of Computers”, *Communications of the ACM* (1978).
- Butler W. Lampson and Howard E. Sturgis “Crash Recovery in a Distributed Data Storage System”, *Microsoft Research Technical Report* (1979).
- Jim Gray, Paul McJones, Mike Blasgen, Bruce Lindsay, Raymond Lorie, Tom Price, Franco Putzolu, and Irving Traiger “The Recovery Manager of the System R Database Manager”, *ACM Computing Surveys* (1981).
- C. Gray, and D. Cheriton “Leases: An Efficient Fault-Tolerant Mechanism for Distributed File Cache Consistency”, *Proceedings of the 12th ACM Symposium on Operating Systems Principles* (1989).
- Nancy P. Kronenberg, Henry M. Levy, and William D. Strecker “VAX-clusters: A Closely-Coupled Distributed System”, *ACM Transactions on Computer Systems* (1986).
- John H. Howard, Michael L. Kazar, Sherri G. Menees, David A. Nichols, M. Satyanarayanan, Robert N. Sidebotham, and Michael J. West “Scale and Performance in a Distributed File System”, *ACM Transactions on Computer Systems* (1988).
- Andrew D. Birrell, Roy Levin, Michael D. Schroeder, and Roger M. Needham “Grapevine: An Exercise in Distributed Computing”, *Communications of the ACM* (1982).
- J. H. Saltzer, D. P. Reed, and D. D. Clark “End-to-End Arguments in System Design”, *ACM Transactions on Computer Systems* (1984).
- Michael Burrows, Martin Abadi, and Roger Needham “A Logic of Authentication”, *ACM Transactions on Computer Systems* (1990).
- Fred B. Schneider “Implementing Fault-Tolerant Services Using the State Machine Approach: a tutorial”, *ACM Computing Surveys* (1990).

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- George C. Necula and Peter Lee “[Safe Kernel Extensions Without Run-Time Checking](#)”, *Proceedings of the 2nd USENIX Symposium on Operating Systems Design and Implementation* (1996).
- Dennis M. Ritchie and Ken Thompson “[The UNIX Time-Sharing System](#)”, *Communications of the ACM* (1974).
- Butler W. Lampson “[Hints for Computer System Design](#)”, *Proceedings of the 9th ACM Symposium on Operating Systems Principles* (1983).
- Edouard Bugnion, Scott Devine, Kinshuk Govil, and Mendel Rosenblum “[Disco: Running Commodity Operating Systems of Scalable Multiprocessors](#)”, *ACM Transactions on Computer Systems* (1997).