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## MPI: A Message-Passing Interface Standard

• April 1994


1994 Technical Report

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organizations, has been meeting since November 1992 to discuss and define a set of library standards for message passing. MPIF is not sanctioned or supported by any official standards organization. The goal of the Message Passing Interface, simply stated, is to develop a widely used standard for writing message-passing programs. As such the interface should establish a practical, portable, efficient and flexible standard for message passing. , This is the final report, Version 1.0, of the Message Passing Interface Forum. This document contains all the technical features proposed for the interface. This copy of the draft was processed by LATEX on April 21, 1994. , Please send comments on MPI to [mpi-comments@cs.utk.edu](mailto:mpi-comments@cs.utk.edu). Your comment will be forwarded to MPIF committee members who will attempt to respond.

## ■ Cited By

1. [Pauloski J, Hayot-Sasson V, Ward L, Brace A, Bauer A, Chard K and Foster I \(2025\). Object Proxy Patterns for Accelerating Distributed Applications, \*IEEE Transactions on Parallel and Distributed Systems\*, 36:2, \(253-265\), Online publication date: 1-Feb-2025.](#)

---

2. [Rotchford D, Evans S and Filgueira R Laminar 2.0: Serverless Stream Processing with Enhanced Code Search and Recommendations Proceedings of the SC '24 Workshops of the International Conference on High Performance Computing, Network, Storage, and Analysis, \(2088-2095\).](#)

---

3. [♦ \[Meng L, Shao Y, Yuan L, Lai L, Cheng P, Li X, Yu W, Zhang W, Lin X and Zhou J \\(2024\\). A Survey of Distributed Graph Algorithms on Massive Graphs, \\*ACM Computing Surveys\\*, 0:0\]\(#\)](#)

---

4. [♦ \[Laut S, Borrell R and Casas M Extending Sparse Patterns to Improve Inverse Preconditioning on GPU Architectures Proceedings of the 33rd International Symposium on High-Performance Parallel and Distributed Computing, \\(200-213\\).\]\(#\)](#)

---









5. [♦ \[Zhang S, Diao L, Wu C, Cao Z, Wang S and Lin W HAP: SPMD DNN Training on Heterogeneous GPU Clusters with Automated Program Synthesis Proceedings of the Nineteenth European Conference on Computer Systems, \\(524-541\\).\]\(#\)](#)

ACM  DIGITAL LIBRARY












[Workload Elasticity for Optimizing Carbon-Efficiency, \*Proceedings of the ACM on Measurement and\*](#)

Browse ▾

8.  [Zahra Z, Li Z and Filgueira R Laminar: A New Serverless Stream-based Framework with Semantic Code Search and Code Completion Proceedings of the SC '23 Workshops of the International Conference on High Performance Computing, Network, Storage, and Analysis, \(2009–2020\).](#)
9.  [Pauloski J, Hayot-Sasson V, Ward L, Hudson N, Sabino C, Baughman M, Chard K and Foster I Accelerating Communications in Federated Applications with Transparent Object Proxies Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis, \(1–15\).](#)
10.  [Song X, Zhang Y, Chen R and Chen H UGACHE: A Unified GPU Cache for Embedding-based Deep Learning Proceedings of the 29th Symposium on Operating Systems Principles, \(627–641\).](#)
11. [Chen J, Gómez-Luna J, El Hajj I, Guo Y and Mutlu O SimplePIM: A Software Framework for Productive and Efficient Processing-in-Memory Proceedings of the 32nd International Conference on Parallel Architectures and Compilation Techniques, \(99–111\).](#)
12.  [Wang R, Dong D, Lei F, Ma J, Wu K and Lu K Roar: A Router Microarchitecture for In-network Allreduce Proceedings of the 37th International Conference on Supercomputing, \(423–436\).](#)
13.  [Wang S, Wei J, Sabne A, Davis A, Ilbeyi B, Hechtman B, Chen D, Murthy K, Maggioni M, Zhang Q, Kumar S, Guo T, Xu Y and Zhou Z Overlap Communication with Dependent Computation via Decomposition in Large Deep Learning Models Proceedings of the 28th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, Volume 1, \(93–106\).](#)
14.  [Zhang S, Diao L, Wu C, Wang S and Lin W Accelerating large-scale distributed neural network training with SPMD parallelism Proceedings of the 13th Symposium on Cloud Computing, \(403–418\).](#)
15.  [Laut S, Casas M and Borrell R Communication-aware Sparse Patterns for the Factorized Approximate Inverse Preconditioner Proceedings of the 31st International Symposium on High-Performance Parallel and Distributed Computing, \(148–158\).](#)
16. [Miao X, Zhang H, Shi Y, Nie X, Yang Z, Tao Y and Cui B \(2021\). HET, \*Proceedings of the VLDB Endowment\*, \*\*15\*\*:2, \(312–320\), Online publication date: 1–Oct–2021.](#)
17.  [Mitchell R, Frank E and Holmes G \(2021\). An Empirical Study of Moment Estimators for Quantile Approximation, \*ACM Transactions on Database Systems\*, \*\*46\*\*:1, \(1–21\), Online publication date: 31–Mar–2021.](#)





ACM  DIGITAL LIBRARY

Browse ▾

- (31–38).
20.  [Träff J, Hunold S, Mercier G and Holmes D Collectives and Communicators: A Case for Orthogonality Proceedings of the 27th European MPI Users' Group Meeting, \(31–38\)](#)
  21.  [Sang D and Lan P BK.Synapse Proceedings of the 10th International Symposium on Information and Communication Technology, \(43–48\).](#)
  22.  [Zimmer C, Atchley S, Pankajakshan R, Smith B, Karlin I, Leininger M, Bertsch A, Ryujin B, Burmark J, Walker-Loud A, Clark M and Pearce O An evaluation of the CORAL interconnects Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis, \(1–18\)](#)
  23.  [Michelogiannakis G, Shen Y, Teh M, Meng X, Aivazi B, Groves T, Shalf J, Glick M, Ghobadi M, Dennison L and Bergman K Bandwidth steering in HPC using silicon nanophotonics Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis, \(1–25\)](#)
  24.  [Marts W, Dosanjh M, Schonbein W, Grant R and Bridges P MPI tag matching performance on ConnectX and ARM Proceedings of the 26th European MPI Users' Group Meeting, \(1–10\)](#)
  25.  [Rivas-Gomez S, Fanfarillo A, Narasimhamurthy S and Markidis S Persistent coarrays Proceedings of the 26th European MPI Users' Group Meeting, \(1–8\)](#)
  26.  [Bangalore P, Rabenseifner R, Holmes D, Jaeger J, Mercier G, Blaas-Schenner C and Skjellum A Exposition, clarification, and expansion of MPI semantic terms and conventions Proceedings of the 26th European MPI Users' Group Meeting, \(1–10\)](#)
  27. [Yang G, Qiu R, Khurshid S, Păsăreanu C and Wen J \(2019\). A synergistic approach to improving symbolic execution using test ranges, \*Innovations in Systems and Software Engineering\*, \*\*15\*\*:3–4, \(325–342\), Online publication date: 1-Sep-2019.](#)
  28.  [Träff J and Hunold S Cartesian Collective Communication Proceedings of the 48th International Conference on Parallel Processing, \(1–11\)](#)
  29. [Kim J, Aghayev A, Gibson G and Xing E STRADS-AP Proceedings of the 2019 USENIX Conference on Usenix Annual Technical Conference, \(207–221\)](#)
  30.  [Anderson G, Pailoor S, Dillig I and Chaudhuri S Optimization and abstraction: a synergistic](#)

ACM  DIGITAL LIBRARY

Browse ▾

32.  [Kang Q, Träff J, Al-Bahrani R, Agrawal A, Choudhary A and Liao W Full-Duplex Inter-Group All-to-All Broadcast Algorithms with Optimal Bandwidth Proceedings of the 25th European MPI Users' Group Meeting, \(1-10\).](#)
33.  [Sulzmann M and Stadtmüller K Two-Phase Dynamic Analysis of Message-Passing Go Programs Based on Vector Clocks Proceedings of the 20th International Symposium on Principles and Practice of Declarative Programming, \(1-13\).](#)
34.  [Gindraud F, Rastello F, Cohen A and Broquedis F \(2016\). A bounded memory allocator for software-defined global address spaces, \*ACM SIGPLAN Notices\*, \*\*51\*\*:11, \(78-88\), Online publication date: 19-Jul-2018.](#)
35.  [Alvaro P, Conway N, Hellerstein J and Maier D \(2017\). Blazes, \*ACM Transactions on Database Systems\*, \*\*42\*\*:4, \(1-31\), Online publication date: 31-Dec-2018.](#)
36.  [Harvey P and Sventek J Adaptable Actors Proceedings of the 9th Workshop on Programming Languages and Operating Systems, \(22-28\).](#)
37.  [Sato K, Ahn D, Laguna I, Lee G, Schulz M and Chambreau C \(2017\). Noise Injection Techniques to Expose Subtle and Unintended Message Races, \*ACM SIGPLAN Notices\*, \*\*52\*\*:8, \(89-101\), Online publication date: 26-Oct-2017.](#)
38.  [Ahmed H, Skjellumh A, Bangalore P and Pirkelbauer P Transforming blocking MPI collectives to Non-blocking and persistent operations Proceedings of the 24th European MPI Users' Group Meeting, \(1-11\).](#)
39.  [Ouermi T, Knoll A, Kirby R and Berzins M OpenMP 4 Fortran Modernization of WSM6 for KNL Practice and Experience in Advanced Research Computing 2017: Sustainability, Success and Impact, \(1-8\).](#)
40.  [Mhembere D, Zheng D, Priebe C, Vogelstein J and Burns R knor Proceedings of the 26th International Symposium on High-Performance Parallel and Distributed Computing, \(67-78\).](#)
41. [Qiu R, Khurshid S, Păsăreanu C and Yang G A synergistic approach for distributed symbolic execution using test ranges Proceedings of the 39th International Conference on Software Engineering Companion, \(130-132\).](#)
42. [Kumar S, Ziaio A and van Leuken B \(2017\) Fighting Dark Silicon. \*IEEE Transactions on Very Large Scale\*](#)

ACM  DIGITAL LIBRARY







Browse ▾

[Symposium on Principles and Practice of Parallel Programming, \(89–101\).](#)

44. [Iyer C, Carothers C and Drineas P Randomized sketching for large-scale sparse ridge regression problems Proceedings of the 7th Workshop on Latest Advances in Scalable Algorithms for Large-Scale Systems, \(65–72\).](#)
45. [Laguna I and Schulz M Pinpointing scale-dependent integer overflow bugs in large-scale parallel applications Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis, \(1–12\).](#)
46. [C. Coelho C, Abreu C, Ramos R, D. Mendes A, Teodoro G and Ralha C \(2016\). MASE-BDI, \*Applied Intelligence\*, \*\*45\*\*:3, \(904–922\), Online publication date: 1-Oct-2016.](#)
47.  [Kouzapas D, Dardha O, Perera R and Gay S Typechecking protocols with Mungo and StMungo Proceedings of the 18th International Symposium on Principles and Practice of Declarative Programming, \(146–159\).](#)
48. [Zhang M, Wu Y, Chen K, Ma T and Zheng W \(2016\). Measuring and optimizing distributed array programs, \*Proceedings of the VLDB Endowment\*, \*\*9\*\*:12, \(912–923\), Online publication date: 1-Aug-2016.](#)
49.  [Gindraud F, Rastello F, Cohen A and Broquedis F A bounded memory allocator for software-defined global address spaces Proceedings of the 2016 ACM SIGPLAN International Symposium on Memory Management, \(78–88\).](#)
50.  [Harvey P, Bakanov K, Spence I and Nikolopoulos D A Scalable Runtime for the ECOSCALE Heterogeneous Exascale Hardware Platform Proceedings of the 6th International Workshop on Runtime and Operating Systems for Supercomputers, \(1–8\).](#)
51. [Dosanjh M, Groves T, Grant R, Brightwell R and Bridges P RMA-MT Proceedings of the 16th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing, \(550–559\).](#)
52. [Isaila F, Carretero J and Ross R CLARISSE Proceedings of the 16th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing, \(346–355\).](#)
53.  [You Y, Wu H, Tsai Y and Chao Y \(2015\). VirtCL: a framework for OpenCL device abstraction and management, \*ACM SIGPLAN Notices\*, \*\*50\*\*:8, \(161–172\), Online publication date: 18-Dec-2015.](#)
54.  [Iyer C, Avron H, Kollias G, Ineichen Y, Carothers C and Drineas P A scalable randomized least](#)






ACM  DIGITAL LIBRARY

Browse ▼

56.  [Yan Y, Lin P, Liao C, de Supinski B and Quinlan D Supporting multiple accelerators in high-level programming models Proceedings of the Sixth International Workshop on Programming Models and Applications for Multicores and Manycores, \(170–180\).](#)
57.  [You Y, Wu H, Tsai Y and Chao Y VirtCL: a framework for OpenCL device abstraction and management Proceedings of the 20th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, \(161–172\).](#)
58. [Hammond J, Schäfer A and Latham R To INT\\_MAX... and beyond! Proceedings of the 2014 Workshop on Exascale MPI, \(1–8\).](#)
59.  [Dinan J and Flajslik M Contexts Proceedings of the 8th International Conference on Partitioned Global Address Space Programming Models, \(1–9\).](#)
60.  [André É, Coti C and Evangelista S Distributed Behavioral Cartography of Timed Automata Proceedings of the 21st European MPI Users' Group Meeting, \(109–114\).](#)
61. [Egwutuoha I, Levy D, Selic B and Chen S \(2013\). A survey of fault tolerance mechanisms and checkpoint/restart implementations for high performance computing systems, \*The Journal of Supercomputing\*, \*\*65\*\*:3, \(1302–1326\), Online publication date: 1-Sep-2013.](#)
62. [Rodrigues E, Navaux P, Panetta J and Mendes C \(2013\). Preserving the original MPI semantics in a virtualized processor environment, \*Science of Computer Programming\*, \*\*78\*\*:4, \(412–421\), Online publication date: 1-Apr-2013.](#)
63. [Goglin B and Moreaud S \(2013\). KNEM, \*Journal of Parallel and Distributed Computing\*, \*\*73\*\*:2, \(176–188\), Online publication date: 1-Feb-2013.](#)
64.  [Mattheakis P and Papaefstathiou I \(2013\). Significantly reducing MPI intercommunication latency and power overhead in both embedded and HPC systems, \*ACM Transactions on Architecture and Code Optimization\*, \*\*9\*\*:4, \(1–25\), Online publication date: 1-Jan-2013.](#)
65.  [Sarmiento E, Breitman K, Dávila A and Viterbo J A framework for readapting and running bioinformatics applications in the cloud Proceedings of the 2012 ACM Research in Applied Computation Symposium, \(86–91\).](#)
66. [Hammond J, Krishnamoorthy S, Shende S, Romero N and Malony A \(2012\). Performance characterization of global address space applications: a case study with NWChem, \*Concurrency and Computation: Practice & Experience\*, \*\*24\*\*:2, \(135–154\), Online publication date: 1-Feb-2012.](#)

ACM  DIGITAL LIBRARY

Browse ▾

69.  [Sathe S and Shrimankar D Parallelization of DNA sequence alignment using OpenMP Proceedings of the 2011 International Conference on Communication, Computing & Security, \(200–203\).](#)
70. [Goglin B \(2011\). High-performance message-passing over generic Ethernet hardware with Open-MX, \*Parallel Computing\*, \*\*37\*\*:2, \(85–100\), Online publication date: 1-Feb-2011.](#)
71. [Natvig T, Elster A and Meyer J Automatic Run-time Parallelization and Transformation of I/O Proceedings of the 2010 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis, \(1–10\).](#)
72.  [Farreras M and Almasi G Asynchronous PGAS runtime for Myrinet networks Proceedings of the Fourth Conference on Partitioned Global Address Space Programming Model, \(1–10\).](#)
73. [Emad N, Delannoy O and Dandouna M Numerical library reuse in parallel and distributed platforms Proceedings of the 9th international conference on High performance computing for computational science, \(271–278\).](#)
74.  [Rodrigues E, Navaux P, Panetta J and Mendes C A new technique for data privatization in user-level threads and its use in parallel applications Proceedings of the 2010 ACM Symposium on Applied Computing, \(2149–2154\).](#)
75. [Angskun T, Fagg G, Bosilca G, Pješivac-Grbović J and Dongarra J \(2010\). Self-healing network for scalable fault-tolerant runtime environments, \*Future Generation Computer Systems\*, \*\*26\*\*:3, \(479–485\), Online publication date: 1-Mar-2010.](#)
76. [Epitropakis M, Plagianakos V and Vrahatis M \(2010\). Hardware-friendly Higher-Order Neural Network Training using Distributed Evolutionary Algorithms, \*Applied Soft Computing\*, \*\*10\*\*:2, \(398–408\), Online publication date: 1-Mar-2010.](#)
77.  [Muszala S, Amundson J, McInnes L and Norris B Two-tiered component design and performance analysis of Synergia2 accelerator simulations Proceedings of the 2009 Workshop on Component-Based High Performance Computing, \(1–11\).](#)
78.  [Dinan J, Larkins D, Sadayappan P, Krishnamoorthy S and Nieplocha J Scalable work stealing Proceedings of the Conference on High Performance Computing Networking, Storage and Analysis, \(1–11\).](#)

ACM  DIGITAL LIBRARY

Browse ▾

81.  [Silva J, Veiga L and Ferreira P Heuristic for resources allocation on utility computing infrastructures Proceedings of the 6th international workshop on Middleware for grid computing, \(1-6\)](#)
82. [Larkins D, Dinan J, Krishnamoorthy S, Parthasarathy S, Rountev A and Sadayappan P Global trees Proceedings of the 2008 ACM/IEEE conference on Supercomputing, \(1-13\).](#)
83.  [Min S and Eigenmann R Optimizing irregular shared-memory applications for clusters Proceedings of the 22nd annual international conference on Supercomputing, \(256-265\).](#)
84. [Sodhi S, Subhlok J and Xu Q \(2008\). Performance prediction with skeletons, \*Cluster Computing\*, \*\*11\*\*:2, \(151-165\), Online publication date: 1-Jun-2008.](#)
85. [Armstrong C, Ford R, Freeman T and Riley G \(2008\). NOAH: A CSP-based language for describing the behaviour of coupled models, \*Software—Practice & Experience\*, \*\*38\*\*:2, \(135-159\), Online publication date: 1-Feb-2008.](#)
86. [Psota J and Agarwal A rMPI Proceedings of the 3rd international conference on High performance embedded architectures and compilers, \(22-37\).](#)
87. [Latham R, Gropp W, Ross R and Thakur R Extending the MPI-2 generalized request interface Proceedings of the 14th European conference on Recent Advances in Parallel Virtual Machine and Message Passing Interface, \(223-232\).](#)
88. [Plesser H, Eppler J, Morrison A, Diesmann M and Gewaltig M Efficient parallel simulation of large-scale neuronal networks on clusters of multiprocessor computers Proceedings of the 13th international Euro-Par conference on Parallel Processing, \(672-681\).](#)
89. [Yelick K, Hilfinger P, Graham S, Bonachea D, Su J, Kamil A, Datta K, Colella P and Wen T \(2007\). Parallel Languages and Compilers, \*International Journal of High Performance Computing Applications\*, \*\*21\*\*:3, \(266-290\), Online publication date: 1-Aug-2007.](#)
90. [Sawyer W and Mirin A \(2007\). The implementation of the finite-volume dynamical core in the community atmosphere model, \*Journal of Computational and Applied Mathematics\*, \*\*203\*\*:2, \(387-396\), Online publication date: 20-Jun-2007.](#)
91. [Genaud S and Rattanapoka C Fault management in P2P-MPI Proceedings of the 2nd international conference on Advances in grid and pervasive computing, \(64-77\)](#)

ACM  DIGITAL LIBRARY




Browse ▼

[14927](#), Online publication date: 1-Dec-2006.

94.  [Yu H, Chung I and Moreira J Topology mapping for Blue Gene/L supercomputer Proceedings of the 2006 ACM/IEEE conference on Supercomputing, \(116-es\).](#)
95. [Lima A, Cirne W, Brasileiro F and Fireman D A case for event-driven distributed objects Proceedings of the 2006 Confederated international conference on On the Move to Meaningful Internet Systems: CoopIS, DOA, GADA, and ODBASE - Volume Part II, \(1705-1721\).](#)
96. [Chrabakh W and Wolski R \(2006\). GridSAT, \*Parallel Computing\*, \*\*32\*\*:9, \(660-687\), Online publication date: 1-Oct-2006.](#)
97. [Raghunathan S \(2006\). Making a Supercomputer Do What You Want, \*Computing in Science and Engineering\*, \*\*8\*\*:5, \(70-80\), Online publication date: 1-Sep-2006.](#)
98. [Bell A and Haverkort B \(2006\). Distributed disk-based algorithms for model checking very large Markov chains, \*Formal Methods in System Design\*, \*\*29\*\*:2, \(177-196\), Online publication date: 1-Sep-2006.](#)
99. [Zhuo L and Prasanna V Scalable Hybrid Designs for Linear Algebra on Reconfigurable Computing Systems Proceedings of the 12th International Conference on Parallel and Distributed Systems - Volume 1, \(87-95\).](#)
100. [Chi J, Koyuturk M and Grama A \(2006\). CONQUEST, \*Algorithmica\*, \*\*45\*\*:3, \(377-401\), Online publication date: 1-Jul-2006.](#)
101. [Chilson J, Ng R, Wagner A and Zamar R \(2006\). Parallel Computation of High-Dimensional Robust Correlation and Covariance Matrices, \*Algorithmica\*, \*\*45\*\*:3, \(403-431\), Online publication date: 1-Jul-2006.](#)
102. [Navarrete C, Holgado S and Anguiano E Epitaxial surface growth with local interaction, parallel and non-parallel simulations Proceedings of the 8th international conference on Applied parallel computing: state of the art in scientific computing, \(882-889\).](#)
103. [Natvig T and Elster A Automatic and transparent optimizations of an application's MPI communication Proceedings of the 8th international conference on Applied parallel computing: state of the art in scientific computing, \(208-217\).](#)
104. [Sottile M, Chandu V and Bader D Performance analysis of parallel programs via message-passing](#)

ACM  DIGITAL LIBRARY

Browse ▾

106. [Bronevetsky G, Fernandes R, Marques D, Pingali K and Stodghill P Recent advances in checkpoint/recovery systems Proceedings of the 20th international conference on Parallel and distributed processing, \(282-282\).](#)
107. [Dalessandro D, Devulapalli A and Wyckoff P iWarp protocol kernel space software implementation Proceedings of the 20th international conference on Parallel and distributed processing, \(274-274\).](#)
108.  [Basumallik A and Eigenmann R Optimizing irregular shared-memory applications for distributed-memory systems Proceedings of the eleventh ACM SIGPLAN symposium on Principles and practice of parallel programming, \(119-128\).](#)
109. [Bergamaschi L, Caliarì M, Martínez A and Vianello M A parallel exponential integrator for large-scale discretizations of advection-diffusion models Proceedings of the 12th European PVM/MPI users' group conference on Recent Advances in Parallel Virtual Machine and Message Passing Interface, \(483-492\).](#)
110. [Genaud S and Rattanapoka C A peer-to-peer framework for robust execution of message passing parallel programs on grids Proceedings of the 12th European PVM/MPI users' group conference on Recent Advances in Parallel Virtual Machine and Message Passing Interface, \(276-284\).](#)
111. [Fonseca N, Silva F and Camacho R Strategies to parallelize ILP systems Proceedings of the 15th international conference on Inductive Logic Programming, \(136-153\).](#)
112.  [Basumallik A and Eigenmann R Towards automatic translation of OpenMP to MPI Proceedings of the 19th annual international conference on Supercomputing, \(189-198\).](#)
113.  [Chen Z, Fagg G, Gabriel E, Langou J, Angskun T, Bosilca G and Dongarra J Fault tolerant high performance computing by a coding approach Proceedings of the tenth ACM SIGPLAN symposium on Principles and practice of parallel programming, \(213-223\).](#)
114. [Avallone S, Emma D, Pescapé A and Ventre G \(2005\). Performance evaluation of an open distributed platform for realistic traffic generation, \*Performance Evaluation\*, \*\*60\*\*:1-4, \(359-392\), Online publication date: 1-May-2005.](#)
115. [Denis C, Boufflet J and Breikopf P A Load Balancing Method for a Parallel Application Based on a Domain Decomposition Proceedings of the 19th IEEE International Parallel and Distributed Processing Symposium \(IPDPS'05\) - Papers - Volume 01](#)

ACM  DIGITAL LIBRARY

Browse ▾

118. [Liu D and Franklin M GridDB Proceedings of the Thirtieth international conference on Very large data bases - Volume 30, \(600-611\).](#)
119.  [Chilson J, Ng R, Wagner A and Zamar R Parallel computation of high dimensional robust correlation and covariance matrices Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining, \(533-538\).](#)
120. [Sosonkina M Adapting distributed scientific applications to run-time network conditions Proceedings of the 7th international conference on Applied Parallel Computing: state of the Art in Scientific Computing, \(747-755\).](#)
121. [Radons G, Runger G, Schwind M and Yang H Parallel algorithms for the determination of lyapunov characteristics of large nonlinear dynamical systems Proceedings of the 7th international conference on Applied Parallel Computing: state of the Art in Scientific Computing, \(1131-1140\).](#)
122. [Zhu X and Malik S Using a Communication Architecture Specification in an Application-Driven Retargetable Prototyping Platform for Multiprocessing Proceedings of the conference on Design, automation and test in Europe - Volume 2](#)
123. [References Grid resource management, \(507-566\).](#)
124. [Kuhnemann M, Rauber T and Runger G Performance modelling for task-parallel programs Performance analysis and grid computing, \(77-91\).](#)
125.  [Bronevetsky G, Marques D, Pingali K and Stodghill P \(2003\). Automated application-level checkpointing of MPI programs, \*ACM SIGPLAN Notices\*, \*\*38\*\*:10, \(84-94\), Online publication date: 1-Oct-2003.](#)
126. [Kohout J and George A \(2003\). A high-performance communication service for parallel computing on distributed DSP systems, \*Parallel Computing\*, \*\*29\*\*:7, \(851-878\), Online publication date: 1-Jul-2003.](#)
127.  [Bronevetsky G, Marques D, Pingali K and Stodghill P Automated application-level checkpointing of MPI programs Proceedings of the ninth ACM SIGPLAN symposium on Principles and practice of parallel programming, \(84-94\).](#)
128. [Denis A, Perez C and Priol T \(2003\). PadicoTM, \*Future Generation Computer Systems\*, \*\*19\*\*:4, \(575-585\), Online publication date: 1-May-2003.](#)



ACM  DIGITAL LIBRARY

Browse ▾

131. [Meyer U, Sanders P and Sibeyn J \(2003\). Algorithms for memory hierarchies, 10.5555/1744652, Online publication date: 1-Jan-2003.](#)
132. [Eisenhauer G, Bustamante F and Schwan K \(2002\). Native Data Representation, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*13\*\*:12, \(1234-1246\), Online publication date: 1-Dec-2002.](#)
133. [Cerdán J, Marin J and Martínez A \(2002\). Polynomial preconditioners based on factorized sparse approximate inverses, \*Applied Mathematics and Computation\*, \*\*133\*\*:1, \(171-186\), Online publication date: 25-Nov-2002.](#)
134. [Eberle H and Gura N Separated high-bandwidth and low-latency communication in the cluster interconnect Clint Proceedings of the 2002 ACM/IEEE conference on Supercomputing, \(1-12\).](#)
135. [Sirotkin V and Tarvainen P \(2002\). Parallel Schwarz methods for convection-dominated semilinear diffusion problems, \*Journal of Computational and Applied Mathematics\*, \*\*145\*\*:1, \(189-211\), Online publication date: 1-Aug-2002.](#)
136. [Allen M, Wolski R and Plank J Adaptive Timeout Discovery Using the Network Weather Service Proceedings of the 11th IEEE International Symposium on High Performance Distributed Computing](#)
137. [Trivedi N, Bischof J, Davis S, Pedretti K, Scheetz T, Braun T, Roberts C, Robinson N, Sheffield V, Soares M and Casavant T \(2002\). Parallel creation of non-redundant gene indices from partial mRNA Transcripts, \*Future Generation Computer Systems\*, \*\*18\*\*:6, \(863-870\), Online publication date: 1-May-2002.](#)
138. [Schmollinger M and Kaufmann M Algorithms for SMP-Clusters Dense Matrix-Vector Multiplication Proceedings of the 16th International Parallel and Distributed Processing Symposium](#)
139. [Ruiz J, Lopera J and Carrillo J Exploiting the multilevel parallelism and the problem structure in the numerical solution of stiff ODEs Proceedings of the 10th Euromicro conference on Parallel, distributed and network-based processing, \(173-180\).](#)
140. [Dimakopoulos V and Dimopoulos N \(2001\). Optimal Total Exchange in Cayley Graphs, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*12\*\*:11, \(1162-1168\), Online publication date: 1-Nov-2001.](#)
141. [Wolski R, Brevik I, Obertelli G, Spring N and Su A \(2001\). Writing Programs that Run EveryWare on](#)

ACM  DIGITAL LIBRARY

Browse ▾

143. [Suh Y and Shin K \(2001\). All-to-All Personalized Communication in Multidimensional Torus and Mesh Networks, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*12\*\*:1, \(38–59\), Online publication date: 1-Jan-2001.](#)
144. [Bustamante F, Eisenhauer G, Schwan K and Widener P Efficient wire formats for high performance computing Proceedings of the 2000 ACM/IEEE conference on Supercomputing, \(39–es\).](#)
145. [Melab N, Talbi E and Petiton S \(2000\). A Parallel Adaptive Gauss–Jordan Algorithm, \*The Journal of Supercomputing\*, \*\*17\*\*:2, \(167–185\), Online publication date: 1-Sep-2000.](#)
146. [Grundmann T, Ritt M and Rosenstiel W TPO++ Proceedings of the Proceedings of the 2000 International Conference on Parallel Processing](#)
147. [Suh Y and Yalamanchili S \(2000\). Configurable Algorithms for Complete Exchange in 2D Meshes, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*11\*\*:4, \(337–356\), Online publication date: 1-Apr-2000.](#)
148. [Rauber T and Runger G \(2000\). A Transformation Approach to Derive Efficient Parallel Implementations, \*IEEE Transactions on Software Engineering\*, \*\*26\*\*:4, \(315–339\), Online publication date: 1-Apr-2000.](#)
149. [Lebak J and Bojanczyk A \(2000\). Design and Performance Evaluation of a Portable Parallel Library for Space–Time Adaptive Processing, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*11\*\*:3, \(287–298\), Online publication date: 1-Mar-2000.](#)
150.  [Wong F, Martin R, Arpaci–Dusseau R and Culler D Architectural requirements and scalability of the NAS parallel benchmarks Proceedings of the 1999 ACM/IEEE conference on Supercomputing, \(41–es\).](#)
151. [Park N, Prasanna V and Raghavendra C Efficient algorithms for block–cyclic array redistribution between processor sets Proceedings of the 1998 ACM/IEEE conference on Supercomputing, \(1–13\).](#)
152.  [Helman D, J J and Bader D \(1998\). A new deterministic parallel sorting algorithm with an experimental evaluation, \*ACM Journal of Experimental Algorithmics\*, \*\*3\*\*, \(4–es\), Online publication date: 1-Sep-1998.](#)
153. [Cohen J, Fraignaud P, Konig J and Raspaud A \(1998\). Optimized Broadcasting and Multicasting Protocols in Cut–Through Routed Networks. \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*9\*\*:8](#)

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[Online publication date: 1-Jul-1998.](#)

156. [Suh Y and Yalamanchili S \(1998\). All-To-All Communication with Minimum Start-Up Costs in 2D/3D Tori and Meshes, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*9\*\*:5, \(442-458\), Online publication date: 1-May-1998.](#)
157.  [Hascoët L \(1997\). Automatic placement of communications in mesh-partitioning parallelization, \*ACM SIGPLAN Notices\*, \*\*32\*\*:7, \(136-144\), Online publication date: 1-Jul-1997.](#)
158.  [Hascoët L Automatic placement of communications in mesh-partitioning parallelization Proceedings of the sixth ACM SIGPLAN symposium on Principles and practice of parallel programming, \(136-144\).](#)
159. [Xu H, Gui Y and Ni L \(1997\). Optimal Software Multicast in Wormhole-Routed Multistage Networks, \*IEEE Transactions on Parallel and Distributed Systems\*, \*\*8\*\*:6, \(597-607\), Online publication date: 1-Jun-1997.](#)
160. [Kunz T \(1997\). High-Level Views of Distributed Executions, \*Automated Software Engineering\*, \*\*4\*\*:2, \(179-197\), Online publication date: 1-Apr-1997.](#)
161. [Colajanni M and Cermele M \(1997\). DAME, \*IEEE Parallel & Distributed Technology: Systems & Technology\*, \*\*5\*\*:1, \(41-55\), Online publication date: 1-Jan-1997.](#)
162. [Chang C, Czajkowski G, Hawblitzel C and von Eicken T Low-latency communication on the IBM RISC system/6000 SP Proceedings of the 1996 ACM/IEEE conference on Supercomputing, \(24-es\).](#)
163. [Ramaswamy S, Simons B and Banerjee P \(1996\). Optimizations for Efficient Array Redistribution on Distributed Memory Multicomputers, \*Journal of Parallel and Distributed Computing\*, \*\*38\*\*:2, \(217-228\), Online publication date: 1-Nov-1996.](#)
164. [Lee C, Kesselman C and Schwab S \(1996\). Near-Real-Time Satellite Image Processing, \*IEEE Computer Graphics and Applications\*, \*\*16\*\*:4, \(79-84\), Online publication date: 1-Jul-1996.](#)
165. [Saini S NAS Experiences of Porting CM Fortran Codes to on IBM SP2 and SGI Power Challenge Proceedings of the 10th International Parallel Processing Symposium, \(878-880\).](#)
166. [Bader D and Jájá J Practical Parallel Algorithms for Dynamic Data Redistribution, Median Finding, and Selection Proceedings of the 10th International Parallel Processing Symposium, \(292-301\).](#)

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169. [Robinson D, Judd D, Mckinley P and Cheng B \(1995\). Efficient Multicast in All-Port Wormhole-Routed Hypercubes, \*Journal of Parallel and Distributed Computing\*, \*\*31\*\*:2, \(126-140\), Online publication date: 1-Dec-1995.](#)
170. [Bhat P, Lim Y and Prasanna V Issues in using heterogeneous HPC systems for embedded real time signal processing applications Proceedings of the 2nd International Workshop on Real-Time Computing Systems and Applications](#)
171.  [Karamcheti V and Chien A A comparison of architectural support for messaging in the TMC CM-5 and the Cray T3D Proceedings of the 22nd annual international symposium on Computer architecture, \(298-307\).](#)
172.  [Karamcheti V and Chien A \(1995\). A comparison of architectural support for messaging in the TMC CM-5 and the Cray T3D, \*ACM SIGARCH Computer Architecture News\*, \*\*23\*\*:2, \(298-307\), Online publication date: 1-May-1995.](#)
173.  [Karamcheti V and Chien A \(1994\). Software overhead in messaging layers, \*ACM SIGOPS Operating Systems Review\*, \*\*28\*\*:5, \(51-60\), Online publication date: 1-Dec-1994.](#)
174. [Xu H, Gui Y and Ni L Optimal software multicast in wormhole-routed multistage networks Proceedings of the 1994 ACM/IEEE conference on Supercomputing, \(703-712\).](#)
175.  [Karamcheti V and Chien A Software overhead in messaging layers Proceedings of the sixth international conference on Architectural support for programming languages and operating systems, \(51-60\)](#)
176.  [Karamcheti V and Chien A \(1994\). Software overhead in messaging layers, \*ACM SIGPLAN Notices\*, \*\*29\*\*:11, \(51-60\), Online publication date: 1-Nov-1994.](#)
177. [Kalas I, Arjomandi E, Gao G and O'Farrell B FTL Proceedings of the 1994 conference of the Centre for Advanced Studies on Collaborative research](#)

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