TOP500 Supercomputer Sites

16th Edition

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Abstract

To provide a better basis for statistics on high-performance computers, we list the sites that have the 500 most powerful computer systems installed. The best LINPACK benchmark performance achieved is used as a performance measure in ranking the computers.

1 Introduction and Objectives

Statistics on high-performance computers are of major interest to manufacturers, users, and potential users. These people wish to know not only the number of systems installed, but also the location of the various supercomputers within the high-performance computing community and the applications for which a computer system is being used. Such statistics can facilitate the establishment of collaborations, the exchange of data and software, and provide a better understanding of the high-performance computer market.

Statistical lists of supercomputers are not new. Every year since 1986 Hans Meuer [1] has published system counts of the major vector computer manufacturers, based principally on those at the Mannheim Supercomputer Seminar. Statistics based merely on the name of the manufacturer are no longer useful, however. New statistics are required that reflect the diversification of supercomputers, the enormous performance difference between low-end and high-end models, the increasing availability of massively parallel processing (MPP) systems, and the strong increase in computing power of the high-end models of workstation suppliers (SMP).

To provide this new statistical foundation, we have decided in 1993 to assemble and maintain a list of the 500 most powerful computer systems. Our list has been compiled twice a year since June 1993 with the help of high-performance computer experts, computational scientists, manufacturers, and the Internet community in general who responded to a questionnaire we sent out; we thank all the contributors for their cooperation.

In the present list (which we call the TOP500), we list computers ranked by their performance on the LINPACK Benchmark. While we make every attempt to verify the results obtained from users and vendors, errors are bound to exist and should be brought to our attention. We intend to continue to update this list half-yearly and, in this way, to keep track with the evolution of computers. Hence, we welcome any comments and information; please send electronic mail

to *top500@rz.uni-mannheim.de*. The list is freely available on the WWW at www.top500.org. The interested reader can additionally create sublists out of the TOP500 database and can make statistics on his own by using the WWW interface at
http://www.top500.org . Here you also have access to postscript versions of slides dealing with the interpretation of the present situation as well as with the evolution over time since we started this project.

2 The LINPACK Benchmark

As a yardstick of performance we are using the "best" performance as measured by the LINPACK Benchmark [2]. LINPACK was chosen because it is widely used and performance numbers are available for almost all relevant systems.

The LINPACK Benchmark was introduced by Jack Dongarra. A detailed description as well as a list of performance results on a wide variety of machines is available in postscript form from *netlib*. To retrieve a copy send electronic mail to *netlib@ornl.gov* and by typing the message *send performance from benchmark* or from any machine on the internet type:
rcp anon@netlib2.cs.utk.edu:benchmark/performance performance.

The benchmark used in the LINPACK Benchmark is to solve a dense system of linear equations. For the TOP500, we used that version of the benchmark that allows the user to scale the size of the problem and to optimize the software in order to achieve the best performance for a given machine. This performance does not reflect the *overall performance* of a given system, as no single number ever can. It does, however, reflect the *performance of a dedicated system for solving a dense system of linear equations.* Since the problem is very regular, the performance achieved is quite high, and the performance numbers give a good correction of peak performance.

By measuring the actual performance for different problem sizes n, a user can get not only the maximal achieved performance R_{max} for the problem size N_{max} but also the problem size $N_{1/2}$ where half of the performance R_{max} is achieved. These numbers together with the theoretical peak performance R_{peak} are the numbers given in the TOP500. In an attempt to obtain uniformity across all computers in performance reporting, the algorithm used in solving the system of equations in the benchmark procedure must confirm to the standard operation count for LU factorization with partial pivoting. In particular, the operation count for the algorithm must be $2/3n^3 + O(n^2)$ floating point operations. This excludes the use of a fast matrix multiply algorithm like "Strassian's Method". This is done to provide a comparable set of performance numbers across all computers. If in the future a more realistic metric finds widespread usage, so that numbers for all systems in question are available, we may convert to that performance measure.

3 The TOP500 List

Table 1 shows the 500 most powerful commercially available computer systems known to us. To keep the list as compact as possible, we show only a part of our information here:

• N_{world}	Position within the TOP500 ranking
• Manufacturer	Manufacturer or vendor
• Computer	Type indicated by manufacturer or vendor
• Installation Site	Customer
• Location	Location and country
• Year	Year of installation/last major update
• Field of Application	
• # Proc.	Number of processors[1]
• R_{max}	Maximal LINPACK performance achieved
• R_{peak}	Theoretical peak performance
• N_{max}	Problemsize for achieving R_{max}
• $N_{1/2}$	Problemsize for achieving half of R_{max}

If R_{max} from Table 3 of the LINPACK Report [2] is not available, we use the TPP performance given in Table 1 of the LINPACK Report [2] for solving a system of 1000 equations. To use a consistent yardstick for all systemwe we do not use results achieved by advanced parallel algorithm as defined in [2]. In case of the Cray T90, C90 and J90 systems we had to use older able 3 or Table 1 results. In a few cases we interpolated between two measured system sizes.

For models where we did not receive the requested data, the performance of the next smaller system measured is used.

If there should be any changes in the performances given in Table 1 we will update them.

In addition to cross checking different sources of information, we select randomly a statistical representative sample of the first 500 systems of our database. For these systems we ask the supplier of the information to establish direct contact between the installation site and us to verify the given information. This gives us basic information about the quality of the list in total.

As the TOP500 should provide a basis for statistics on the market of high-performance computers, we limit the number of systems installed at vendor sites. This is done for each vendor separately by limiting the accumulated performance of systems at vendor sites to a maximum of 5% of the total accumulated installed performance of this vendor. Rounding is done in favor of the vendor in question.

In Table 1, the computers are ordered first by their R_{max} value. In the case of equal performances (R_{max} value) for different computers, we have chosen to order by R_{peak}. For sites that have the same computer, the order is by memory size and then alphabetically.

TOP500 **Supercomputers - Worldwide**

N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
1	IBM ASCI White, SP Power3 375 MHz	Lawrence Livermore National Laboratory Livermore USA /2000	Research Energy	8192	**4938** 12288	430000 430000
2	Intel ASCI Red	Sandia National Labs Albuquerque USA /1999	Research	9632	**2379** 3207	362880 75400
3	IBM ASCI Blue-Pacific SST, IBM SP 604e	Lawrence Livermore National Laboratory Livermore USA /1999	Research Energy	5808	**2144** 3868	431344 .
4	SGI ASCI Blue Mountain	Los Alamos National Laboratory Los Alamos USA /1998	Research	6144	**1608** 3072	374400 138000
5	IBM SP Power3 375 MHz	Naval Oceanographic Office (NAVOCEANO) Bay Saint Louis USA /2000	Research Aerospace	1336	**1417** 2004	374000 .
6	IBM SP Power3 375 MHz	National Centers for Environmental Prediction Camp Spring USA /2000	Research Weather	1104	**1179** 1656	. .
7	Hitachi SR8000-F1/112	Leibniz Rechenzentrum Muenchen Germany /2000	Academic	112	**1035** 1344	120000 15160
8	IBM SP Power3 375 MHz 8 way	UCSD/San Diego Supercomputer Center San Diego USA /2000	Research	1152	**929** 1728	220000 62000
9	Hitachi SR8000-F1/100	High Energy Accelerator Research Organization /KEK Tsukuba Japan /2000	Research	100	**917** 1200	115000 15000
10	Cray Inc. T3E1200	Government USA /1998	Classified	1084	**892** 1300.8	. .
11	Cray Inc. T3E1200	US Army HPC Research Center at NCS Minneapolis USA /2000	Research	1084	**892** 1300.8	. .
12	Fujitsu VPP5000/100	ECMWF Reading UK /2000	Research Weather	100	**886** 960	195600 18000
13	Hitachi SR8000/128	University of Tokyo Tokyo Japan /1999	Academic	128	**873** 1024	120000 16000
14	Cray Inc. T3E900	Government USA /1997	Classified	1324	**815** 1191.6	134400 26880
15	IBM SP Power3 375 MHz	Charles Schwab USA /2000	Industry Finance	768	**795** 1152	. .
16	IBM SP Power3 375 MHz	North Carolina Supercomputing Center (NCSC) USA /2000	Academic	720	**741** 1080	. .
17	IBM SP Power3 375 MHz	Oak Ridge National Laboratory Oak Ridge USA /2000	Research	704	**723** 1056	187000 37500
18	Hitachi SR8000-E1/80	Japan Meteorological Agency 4 Japan /2000	Research Weather	80	**691.3** 768	120000 9408
19	SGI ORIGIN 2000 250 MHz	Los Alamos National Laboratory/ACL Los Alamos USA /1999	Research	2048	**690.9** 1024	229248 80640
20	IBM SP Power3 375 MHz	NCAR (National Center for Atmospheric Research) Boulder USA /2000	Research	668	**688** 1002	. .

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21	Cray Inc. T3E900	Naval Oceanographic Office (NAVOCEANO) Bay Saint Louis USA /1999	Research Weather	1084	**675** 975.6	. .
22	Cray Inc. T3E1200	CSAR at the University of Manchester Manchester UK /2000	Academic	812	**671** 974.4	. .
23	Cray Inc. T3E1200	Deutscher Wetterdienst Offenbach Germany /1999	Research Weather	812	**671** 974.4	. .
24	Hitachi SR8000-F1/60	University of Tokyo/Institute for Solid State Physics Tokyo Japan /2000	Academic	60	**577** 720	89000 10000
25	IBM SP Power3 375 MHz	Wright-Patterson Air Force Base/DoD ASC USA /2000	Research Defense	528	**553** 792	. .
26	Cray Inc. T3E900	United Kingdom Meteorological Office Bracknell UK /1997	Research Weather	876	**552** 788.4	. .
27	IBM SP Power3 375 MHz 16 way	IBM Poughkeepsie USA /2000	Vendor	512	**546** 768	148000 33000
28	IBM SP Power3 375 MHz 16 way	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	512	**546** 768	148000 33000
29	Cray Inc. T3E1200	United Kingdom Meteorological Office Bracknell UK /1999	Research Weather	636	**526** 763.2	. .
30	Cray Inc. T3E	NASA/Goddard Space Flight Center Greenbelt USA /2000	Research Weather	1356	**525** 813	. .
31	Compaq AlphaServer SC ES40/EV67	Compaq Computer Corporation Littleton USA /2000	Vendor Benchmarking	512	**507.6** 683	200000 30000
32	Compaq AlphaServer SC ES40/EV67	Lawrence Livermore National Laboratory Livermore USA /2000	Research	512	**507.6** 683	200000 30000
33	Fujitsu VPP5000/56	Nagoya University Nagoya Japan /1999	Academic	56	**492** 537.6	228480 12768
34	IBM SP PC604e 332 MHz	Charles Schwab USA /1999	Industry Finance	1504	**490** 998	. .
35	Fujitsu VPP800/63	Kyoto University Kyoto Japan /1999	Academic	63	**482** 504	234360 12852
36	IBM ASCI Blue-Pacific CTR, IBM SP 604e	Lawrence Livermore National Laboratory Livermore USA /1998	Research Energy	1344	**468.2** 892	205000 65000
37	Hitachi SR8000/64	Tsukuba Advanced Computing Center - TACC/AIST Tsukuba Japan /1999	Research	64	**449** 512	92000 9160
38	Cray Inc. T3E1200	Cray Inc. Chippewa Falls USA /1998	Vendor	540	**447** 648	181440 17280
39	Cray Inc. T3E1200	ERDC MSRC Vicksburg USA /1999	Research Mechanics	540	**447** 648	181440 17280
40	Cray Inc. T3E1200	Forschungszentrum Juelich (FZJ) Juelich Germany /1999	Research	540	**447** 648	181440 17280

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41	Cray Inc. T3E1200	Government USA /1998	Classified	540	**447** 648	181440 17280
42	Cray Inc. T3E900	NERSC/LBNL Berkeley USA /1997	Research	692	**444** 622.8	. .
43	IBM SP Power3 375 MHz	Financial Institution Hong Kong /2000	Industry Finance	424	**441** 636	. .
44	Sun HPC 4500 400 MHz Cluster	Defense Stockholm Sweden /1999	Classified	896	**420.44** 716.8	144000 43200
45	Sun HPC 4500 400 MHz Cluster	Service Provider USA /2000	Industry WWW	896	**420.44** 716.8	144000 43200
46	Sun HPC 4500 400 MHz Cluster	Sun Burlington USA /2000	Vendor	896	**420.44** 716.8	144000 43200
47	Sun HPC 4500 400 MHz Cluster	Sun Sunnyvale USA /2000	Vendor	896	**420.44** 716.8	144000 43200
48	IBM SP Power3 375 MHz	Digiton Finland /2000	Industry	404	**420** 606	. .
49	Hitachi/Tsukuba CP-PACS/2048	Center for Computational Physics, Univ of Tsukuba Tsukuba Japan /1996	Academic	2048	**368.2** 614	103680 30720
50	Cray Inc. T3E	Max-Planck-Gesellschaft MPI/IPP Garching Germany /1997	Research	812	**355** 487	. .
51	Cray Inc. T3E900	HWW/Universitaet Stuttgart Stuttgart Germany /1996	Industry	540	**341** 486	. .
52	Cray Inc. T3E900	Pittsburgh Supercomputer Center Pittsburgh USA /1998	Research	540	**341** 486	. .
53	IBM SP Power3 222 MHz	European Patent Office Austria /2000	Government	562	**334** 499	. .
54	Cray Inc. T3E1200	Government USA /1999	Classified	404	**334** 484.8	. .
55	IBM SP Power3 375 MHz	University of Minnesota/Supercomputing Institute Minneapolis USA /2000	Academic	322	**330** 483	. .
56	Cray Inc. T3E1200	Government USA /2000	Classified	396	**328** 475.2	. .
57	IBM SP Power3 375 MHz	Maui High-Performance Computing Center (MHPCC) USA /2000	Research	320	**327** 480	. .
58	IBM SP Power3 375 MHz	BM F LV STAB LRBS Austria /2000	Government	318	**325** 477	. .
59	Fujitsu VPP700/160E	Institute of Physical and Chemical Res. (RIKEN) Wako Japan /1999	Research	160	**319** 384	168000 24000
60	IBM SP Power3 200 MHz	NERSC/LBNL Berkeley USA /1999	Research	604	**310.3** 483.2	. .

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61	IBM SP Power3 222 MHz	ERDC MSRC Vicksburg USA /2000	Research	512	**307.6** 454.6	148000 35000
62	SGI ORIGIN 2000 400 MHz	NASA/Ames Research Center/NAS Mountain View USA /2000	Research Aerospace	512	**300.2** 409.6	130560 21216
63	Fujitsu VPP5000/32	Central Research Institute of Electric Power Industry/CRIEPI Japan /2000	Research	32	**296.1** 307.2	170880 7680
64	IBM SP Power3 375 MHz	US Army Space and Missile Defense Command Arlington USA /2000	Research	284	**288** 426	. .
65	Fujitsu VPP5000/31	Meteo-France Toulouse France /1999	Research Weather	31	**286** 297.6	. .
66	Cray Inc. T3E750	CSC (Center for Scientific Computing) Espoo Finland /2000	Academic	540	**284** 405	. .
67	NEC SX-5/38M3	CNRS/IDRIS Orsay France /2000	Academic	38	**280** 304	. .
68	Fujitsu VPP5000/30	National Inst. for Molecular Science Okazaki Japan /2000	Research	30	**277** 288	. .
69	SGI ORIGIN 2000 195/250 MHz	NCSA Urbana-Champaign USA /1998	Research	1024	**264.9** 327.68	. .
70	Compaq AlphaServer SC ES40/EV67	Oak Ridge National Laboratory Oak Ridge USA /2000	Research	256	**263.6** 342	106000 20000
71	Compaq AlphaServer SC ES40/EV67	Pittsburgh Supercomputer Center Pittsburgh USA /2000	Research	256	**263.6** 342	106000 20000
72	IBM SP Power3 375 MHz	Purdue University West Lafayette USA /2000	Academic	256	**257** 384	148000 24000
73	Hitachi SR8000/36	Meteorological Research Institute Japan /1999	Research Weather	36	**255** 288	69000 5968
74	Cray Inc. T3E900	ZIB/Konrad Zuse-Zentrum fuer Informationstechnik Berlin Germany /1999	Academic	404	**253** 363.6	. .
75	IBM SP PC604e 332 MHz	Bayer AG Germany /2000	Industry Chemistry	716	**250** 475	. .
76	NEC SX-4/128H4	Tohoku University Aramaki Japan /1997	Academic	128	**244** 256	. .
77	NEC SX-5/32M2	Bureau of Meteorology / CSIRO HPCCC Melbourne Australia /2000	Research Weather	32	**243** 256	. .
78	NEC SX-5/32M2	Meteorological Service of Canada (MSC) Dorval Canada /1999	Research Weather	32	**243** 256	. .
79	NEC SX-5/32H2	National Research Institute for Metals Tsukuba Japan /2000	Research	32	**243** 256	. .
80	IBM LosLobos	University of New Mexico USA /2000	Academic	512	**237** 375	150000 20000

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81	Cray Inc. T3E1200	Government USA /1999	Classified	284	**235** 340.8	. .
82	Cray Inc. T3E	Cray Inc. Eagan USA /1997	Vendor	540	**234** 324	86400 14400
83	Cray Inc. T3E	Forschungszentrum Juelich (FZJ) Juelich Germany /1996	Research	540	**234** 324	86400 14400
84	Self-made CPlant Cluster	Sandia National Laboratories Albuquerque USA /1999	Research	580	**232.6** 580	. .
85	Hitachi SR2201/1024	University of Tokyo Tokyo Japan /1996	Academic	1024	**232.4** 307	155520 34560
86	Fujitsu Numerical Wind Tunnel	NAL Japan /1996	Research Aerospace	167	**229** 281	66132 18018
87	Hitachi SR8000/32	Hokkaido University Sapporo Japan /2000	Academic	32	**229** 256	65000 5632
88	Cray Inc. T3E1200	CINECA Bologna Italy /1999	Academic	268	**221.77** 321.6	. .
89	Cray Inc. T3E900	University of Edinburgh Edinburgh UK /1997	Academic	348	**218** 313.2	. .
90	Fujitsu VPP700/116	ECMWF Reading UK /1997	Research Weather	116	**213** 255.2	111360 18560
91	IBM SP Power3 375 MHz	Bayer AG Germany /2000	Industry Chemistry	210	**212** 315	. .
92	Compaq AlphaServer SC ES40/EV67	Commissariat a l'Energie Atomique (CEA) Grenoble France /1999	Research Energy	232	**211** 309.5	120000 .
93	IBM SP PC604e 332 MHz	Sobeys Canada Nova Scotia Canada /2000	Industry Database	512	**210.2** 339.9	100000 20872
94	IBM SP Power3 375 MHz	Saudi ARAMCO Saudi Arabia /2000	Industry Geophysics	206	**208** 309	. .
95	Hewlett-Packard V2600/HyperPlex	Hewlett-Packard Richardson USA /2000	Vendor Benchmarking	256	**196** 565.24	. .
96	HPTi ACL-276 667 MHz	Forecast Systems Laboratory/NOAA Boulder USA /1999	Research Weather	276	**196** 368	80000 .
97	SGI ORIGIN 2000 300 MHz	NASA/Ames Research Center/NAS Mountain View USA /1999	Research Aerospace	512	**195.6** 307.2	110592 23040
98	SGI ORIGIN 2000 300 MHz	Tohoku University, Institute of Fluid Science Aramaki Japan /2000	Academic	512	**195.6** 307.2	110592 23040
99	IBM SP PC604e 332 MHz	Air Force Weather Agency USA /1999	Research	440	**181** 292	. .
100	NEC SX-5/24M2	Korea Meteorological Administration (KMA) Korea /2000	Research Weather	24	**181** 192	. .

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101	IBM SP P2SC 120/135 MHz	Pacific Northwest National Laboratory Richland USA /1998	Research	512	**180.906** 248.32	62000 .
102	IBM SP Power3 375 MHz	Deutsche Telekom AG Darmstadt Germany /2000	Industry Telecomm	168	**171** 252	. .
103	IBM SP Power3 375 MHz	Florida State University USA /2000	Academic	168	**171** 252	. .
104	IBM SP Power3 375 MHz	National Center for High Performance Computing HsinChu Taiwan /2000	Academic	168	**171** 252	. .
105	IBM SP Power3 375 MHz	PIK Potsdam Germany /2000	Research	168	**171** 252	. .
106	Cray Inc. T3E900	Network Computing Services, Inc. USA /1997	Industry	268	**169** 241.2	. .
107	Cray Inc. T3E900	University of Alaska - ARSC Fairbanks USA /1999	Academic	268	**169** 241.2	. .
108	IBM SP S80s 450 MHz	Metro MGI Informatik Germany /2000	Industry	510	**167.8** 459	113000 31000
109	IBM SP Power3 375 MHz	Air Force Weather Agency USA /2000	Research	160	**164** 240	. .
110	IBM SP Power3 375 MHz	GWDG Goettingen Germany /2000	Academic	160	**164** 240	. .
111	IBM SP Power3 375 MHz	Philip Morris USA /2000	Industry	160	**164** 240	. .
112	IBM SP PC604e 332 MHz	Bank Administration Institute (BAI) USA /2000	Industry Finance	396	**163** 262	. .
113	IBM SP PC604e 332 MHz	BCDI USA /2000	Industry	392	**162** 260	. .
114	IBM SP PC604e 332 MHz	Metallurgical Industry Co. USA /2000	Industry	392	**162** 260	. .
115	IBM SP Power3 375 MHz	Support Net Inc USA /2000	Industry	156	**160** 234	. .
116	IBM SP Power3 375 MHz 16 way	Seoul National University Seoul Korea /2000	Academic	144	**156** 216	. .
117	IBM SP Power3 375 MHz	Bayer AG Austria /2000	Industry Chemistry	150	**154** 225	. .
118	IBM SP Power3 375 MHz	Saudi ARAMCO Saudi Arabia /2000	Industry Geophysics	148	**152** 222	. .
119	SGI ORIGIN 2000	Wright-Patterson Air Force Base/DoD ASC USA /1999	Research	512	**152** 199.68	. .
120	IBM SP Power3 200 MHz	State Farm USA /1999	Industry Database	260	**151.5** 208.1	. .

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121	IBM SP PC604e 332 MHz	BASF Ludwigshafen Germany /2000	Industry Chemistry	364	**151** 241	. .
122	IBM SP Power3 200 MHz	Tsukuba Advanced Computing Center - TACC/AIST Tsukuba Japan /1999	Research	256	**149.3** 205	100000 18500
123	IBM SP Power3 375 MHz	Prudential Insurance USA /2000	Industry Finance	144	**148** 216	. .
124	IBM SP Power3 375 MHz	Manufacturer Japan /2000	Industry	142	**146** 213	. .
125	Hitachi SR8000/20	Institute of Statistical Mathematics Tokyo Japan /1999	Research	20	**144** 160	48000 4000
126	Self-made CLIC PIII 800 MHz	Technische Universitaet Chemnitz Chemnitz Germany /2000	Academic	528	**143.3** 422	150000 .
127	IBM SP S80s 450 MHz	Bayer AG Germany /2000	Industry Chemistry	294	**139** 264	. .
128	Fujitsu VPP5000/15	Commissariat a l'Energie Atomique (CEA) Grenoble France /1999	Research Energy	15	**139** 144	. .
129	Fujitsu VPP5000/15	Taiwan Central Weather Bureau Taipei Taiwan /1999	Research Weather	15	**139** 144	. .
130	IBM SP PC604e 332 MHz	DeTeCSM Germany /2000	Industry Telecomm	452	**138** 300	. .
131	IBM SP PC604e 332 MHz	DeTeCSM Bielefeld Germany /2000	Industry Telecomm	452	**138** 300	. .
132	IBM SP Power3 222 MHz	Centre Informatique National (CINES) Montpellier France /2000	Academic	224	**138** 198	. .
133	Sun HPC 10000 400 MHz Cluster	Australian Partnership for Advanced Computing (APAC) Canberra Australia /2000	Academic	256	**137.1** 204.8	. .
134	Sun HPC 10000 400 MHz Cluster	Clearstream Services Grande Duchesse Luxembourg /2000	Industry Finance	256	**137.1** 204.8	. .
135	Sun HPC 10000 400 MHz Cluster	Motorola Scottsdale USA /2000	Industry Electronics	256	**137.1** 204.8	. .
136	Sun HPC 10000 400 MHz Cluster	New York City - Human Resources USA /1999	Government	256	**137.1** 204.8	. .
137	Sun HPC 10000 400 MHz Cluster	Sun Broomfield USA /2000	Industry WWW	256	**137.1** 204.8	. .
138	Sun HPC 10000 400 MHz Cluster	US Army Research Laboratory (ARL) Aberdeen USA /1999	Research	256	**137.1** 204.8	. .
139	Sun HPC 10000 400 MHz Cluster	Bank Westboro USA /2000	Industry Finance	256	**137.1** 204.8	. .
140	Sun HPC 10000 400 MHz Cluster	E-commerce Santa Clara USA /2000	Industry WWW	256	**137.1** 204.8	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
141	Sun HPC 10000 400 MHz Cluster	Ford Motor Company Detroit USA /2000	Industry Automotive	256	**137.1** 204.8	. .
142	Sun HPC 10000 400 MHz Cluster	GTE Communications Sacramento USA /2000	Industry Telecomm	256	**137.1** 204.8	. .
143	Sun HPC 10000 400 MHz Cluster	GTE Communications Temple Terrace USA /2000	Industry Telecomm	256	**137.1** 204.8	. .
144	IBM SP Power3 375 MHz	Kaiser Foundation USA /2000	Industry	132	**136** 198	. .
145	IBM SP PC604e 332 MHz	IBM - Thomas Watson Research Center Yorktown Heights USA /2000	Research	320	**133** 212	. .
146	IBM SP PC604e 332 MHz	IBM Credit Corporation USA /2000	Industry	320	**133** 212	. .
147	IBM SP Power3 375 MHz	CSC (Centre for Sientific Computing) Espoo Finland /2000	Academic	128	**132** 192	107000 15400
148	IBM SP Power3 375 MHz	Princeton University Princeton USA /2000	Academic	128	**132** 192	107000 15400
149	IBM SP Power3 375 MHz	Universitaet/Forschungszentrum Karlsruhe Karlsruhe Germany /2000	Academic	128	**132** 192	107000 15400
150	IBM SP Power3 375 MHz	Telecom Denmark (Danadata) Denmark /2000	Industry Telecomm	126	**130** 189	. .
151	IBM SP Power3 375 MHz	Paine Webber USA /2000	Industry	124	**128** 186	. .
152	IBM SP PC604e 332 MHz	British Airways UK /1999	Industry Transportation	302	**126** 200	. .
153	IBM SP Power3 200 MHz	IBM - Thomas Watson Research Center Yorktown Heights USA /2000	Research	212	**124.4** 169.5	. .
154	IBM SP PC604e 332 MHz	Philips Lighting Netherlands /2000	Industry Electronics	298	**124** 197	. .
155	IBM SP Power3 375 MHz	Geco-Prakla Houston USA /2000	Industry Geophysics	120	**124** 180	. .
156	IBM SP Power3 375 MHz	Western Geophysical London UK /2000	Industry Geophysics	120	**124** 180	. .
157	NEC SX-5/16A	Frontier Research System for Global Change Japan /1999	Research	16	**123** 128	99840 1340
158	NEC SX-5/16A	NEC Fuchu Plant Tokyo Japan /1999	Vendor Benchmarking	16	**123** 128	99840 1340
159	NEC SX-5/16A	ONERA France /1999	Research Aerospace	16	**123** 128	99840 1340
160	NEC SX-5/16A	Tohoku University, Institute of Fluid Science Aramaki Japan /1999	Academic	16	**123** 128	99840 1340

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
161	NEC SX-5/16A	Tokyo Institute of Technology Tokyo Japan /1999	Academic	16	**123** 128	99840 1340
162	IBM SP PC604e 332 MHz	Banque National Paris France /2000	Industry Finance	292	**122** 193	. .
163	NEC SX-4/64M2	Meteorological Service of Canada (MSC) Dorval Canada /1999	Research Weather	64	**122** 128	30080 4352
164	NEC SX-4/64M2	National Institute of Fusion Science (NIFS) Japan /1997	Research	64	**122** 128	30080 4352
165	NEC SX-4/64M2	Osaka University Osaka Japan /1997	Academic	64	**122** 128	30080 4352
166	Sun HPC 420 400 MHz Cluster	Financial Services New York USA /2000	Industry Finance	180	**121.9** 144	. .
167	NEC SX-5/32Me2	HWW/Universitaet Stuttgart Stuttgart Germany /2000	Industry	32	**121** 128	. .
168	IBM SP PC604e 332 MHz	Alcatel France /2000	Industry Telecomm	288	**120** 191	. .
169	Sun HPC 10000 400 MHz Cluster	Airline London UK /2000	Industry Transportation	192	**118.16** 153.6	. .
170	Sun HPC 10000 400 MHz Cluster	Bank Milano Italy /2000	Industry Finance	192	**118.16** 153.6	. .
171	Sun HPC 10000 400 MHz Cluster	Bank Munich Germany /2000	Industry Finance	192	**118.16** 153.6	. .
172	Sun HPC 10000 400 MHz Cluster	BellSouth Tucker USA /2000	Industry Telecomm	192	**118.16** 153.6	. .
173	Sun HPC 10000 400 MHz Cluster	Chase GlobalNet USA /2000	Industry Finance	192	**118.16** 153.6	. .
174	Sun HPC 10000 400 MHz Cluster	Computer Manufacturer Lakewood USA /2000	Industry Manufacturing	192	**118.16** 153.6	. .
175	Sun HPC 10000 400 MHz Cluster	Financial Services London UK /2000	Industry Finance	192	**118.16** 153.6	. .
176	Sun HPC 10000 400 MHz Cluster	Rakuten Tokyo Japan /2000	Industry WWW	192	**118.16** 153.6	. .
177	Sun HPC 10000 400 MHz Cluster	Telecommunication Company Tokyo Japan /2000	Industry Telecomm	192	**118.16** 153.6	. .
178	Sun HPC 10000 400 MHz Cluster	EDS Plano USA /2000	Industry Finance	192	**118.1** 153.6	. .
179	Sun HPC 10000 400 MHz Cluster	Telcel Radiomovil Dipsa Mexico City Mexico /2000	Industry Telecomm	192	**118.1** 153.6	. .
180	Cray Inc. T3E	CNRS/IDRIS Orsay France /1996	Academic	268	**117** 160.8	. .

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N $_{world}$	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	**R$_{max}$** R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
181	Cray Inc. T3E	Government USA /1997	Classified	268	**117** 160.8	. .
182	Cray Inc. T3E	National Supercomputer Centre (NSC) Linkoping Sweden /1997	Academic	268	**117** 160.8	. .
183	Cray Inc. T3E	UCSD/San Diego Supercomputer Center San Diego USA /1996	Academic	268	**117** 160.8	. .
184	IBM SP Power3 375 MHz	Geco-Prakla Houston USA /2000	Industry Geophysics	112	**116** 168	. .
185	Hitachi SR8000/16	HWW/Universitaet Stuttgart DLR Stuttgart Germany /2000	Industry	16	**115** 128	42928 3584
186	Cray Inc. T3E1350	Phillips Petroleum Company Bartlesville USA /2000	Industry Geophysics	132	**113.9** 178.2	. .
187	IBM SP PC604e 332 MHz	Sprint USA /1999	Industry Telecomm	268	**112** 177	. .
188	Sun HPC 420 450 MHz Cluster	University of Adelaide Adelaide Australia /2000	Academic	160	**110.01** 144	. .
189	Fujitsu VPP700/56	Kyushu University Fukuoka Japan /1996	Academic	56	**110** 123.2	109200 10752
190	IBM SP P2SC 160 MHz	Atomic Weapons Establishment Aldermaston UK /1999	Classified	252	**109.9** 161.2	. .
191	Cray Inc. T3E1200	National Institute for Water and Atmospheric Resea Wellington New Zealand /1999	Research Weather	132	**109.3** 158.4	. .
192	IBM SP PC604e 332 MHz	ThyssenKrupp Information Systems Germany /2000	Industry Mechanics	260	**109** 172	. .
193	IBM SP PC604e 332 MHz	BASF Ludwigshafen Germany /1998	Industry Chemistry	256	**108.1** 169.9	81460 14180
194	IBM SP PC604e 332 MHz	Japan Adv. Inst. of Science and Technology (JAIST) Hokuriku Japan /1999	Academic	256	**108.1** 169.9	81460 14180
195	IBM SP P2SC 160 MHz	Maui High-Performance Computing Center (MHPCC) USA /1998	Research	243	**106.1** 155.52	. .
196	Fujitsu VPP700/52	Leibniz Rechenzentrum Muenchen Germany /1998	Academic	52	**106** 114.4	. .
197	Sun HPC 10000 400 MHz Cluster	Mannesmann Mobilfunk Ratingen Germany /2000	Industry Telecomm	168	**105.32** 134.4	. .
198	IBM SP Power3 375 MHz	TRW Cleveland USA /2000	Industry Automotive	100	**104** 150	. .
199	IBM SP PC604e 332 MHz	Deere and Company USA /1999	Industry	246	**103** 163	. .
200	IBM SP PC604e 332 MHz	Deutsche Telekom AG Darmstadt Germany /1999	Industry Telecomm	242	**102** 160	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
201	SGI ORIGIN 2000 300 MHz	Centre Informatique National (CINES) Montpellier France /1999	Research	256	**101.4** 153.6	86400 13248
202	SGI ORIGIN 2000 300 MHz	Okazaki National Research Institute Aichi Japan /2000	Research	256	**101.4** 153.6	86400 13248
203	SGI ORIGIN 2000 300 MHz	Tokyo Institute of Technology Tokyo Japan /2000	Academic	256	**101.4** 153.6	86400 13248
204	SGI ORIGIN 2000 250 MHz	NASA/Ames Research Center/NAS Mountain View USA /1998	Research Aerospace	256 128	**101.4**	86400 13248
205	Cray Inc. T3D MC1024-8	Government USA /1994	Classified	1024	**100.5** 152	81920 10224
206	IBM SP Power3 375 MHz	BRS STF USA /2000	Industry	96	**100** 144	. .
207	IBM SP Power3 375 MHz	DaimlerChrysler Stuttgart Germany /2000	Industry Automotive	96	**100** 144	. .
208	IBM SP Power3 375 MHz	Telecom Denmark (Danadata) Denmark /2000	Industry Telecomm	96	**100** 144	. .
209	IBM SP Power3 375 MHz	Telekom Austria Austria /2000	Industry Telecomm	96	**100** 144	. .
210	Compaq ALiCE EV67 616 MHz	Universitaet Wuppertal Wuppertal Germany /2000	Academic	128	**99.2** 157	57024 15488
211	SGI ORIGIN 2000 250/300 MHz - Eth-Cluster	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	256	**98.8** 140	81920 .
212	IBM SP Power3 375 MHz	FT USEI France /2000	Industry Telecomm	94	**98.2** 141	. .
213	IBM SP PC604e 332 MHz	Chase Manhattan New York USA /1999	Industry Finance	232	**98** 153	. .
214	Fujitsu VPP700/48E	ECMWF Reading UK /1998	Research Weather	48	**97.5** 115.2	. .
215	Self-made Kepler PIII 650 MHz	Universitaet Tuebingen Tuebingen Germany /2000	Academic	196	**96.2** 127	109760 12320
216	IBM SP PC604e 332 MHz	ThyssenKrupp Information Systems Germany /2000	Industry Mechanics	226	**95.4** 149	. .
217	IBM SP P2SC 135 MHz	ERDC MSRC Vicksburg USA /1997	Research	256	**94.19** 138.24	. .
218	IBM SP P2SC 135 MHz	Wright-Patterson Air Force Base/DoD ASC USA /1997	Research	256	**94.19** 138.24	. .
219	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256 128	**92.99**	81920 81920
220	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256 128	**92.99**	81920 81920

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
221	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256	**92.99** 128	81920 81920
222	IBM SP PC604e 332 MHz	GWA Web USA /2000	Industry	218	**92.1** 144	. .
223	IBM SP Power3 375 MHz	Digital Insight USA /2000	Industry	88	**92.1** 132	. .
224	IBM SP Power3 375 MHz	Finance Company Japan /2000	Industry Finance	88	**92.1** 132	. .
225	IBM SP Power3 375 MHz	University of Manchester Manchester UK /2000	Academic	88	**92.1** 132	. .
226	IBM SP Power3 375 MHz	Western Geophysical Houston USA /2000	Industry Geophysics	88	**92.1** 132	. .
227	Cray Inc. T3E750	Government USA /1997	Classified	172	**89.8** 129	. .
228	Sun HPC 10000 400 MHz Cluster	Finance Company USA /2000	Industry Finance	144	**89.69** 115.2	. .
229	Sun HPC 10000 400 MHz Cluster	Finance Company USA /2000	Industry Finance	144	**89.69** 115.2	. .
230	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1998	Classified	512	**89** 256	. .
231	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256	**89** 128	. .
232	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256	**89** 128	. .
233	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256	**89** 128	. .
234	SGI ORIGIN 2000 250 MHz - Eth-Cluster	Government USA /1999	Classified	256	**89** 128	. .
235	IBM SP PC604e 332 MHz	Whirlpool USA /1999	Industry Database	210	**88.7** 139	. .
236	IBM SP PC604e 332 MHz	First USA USA /1999	Industry Finance	208	**87.9** 138	. .
237	Compaq AlphaServer GS320 731 MHz	Wright-Patterson Air Force Base/DoD ASC USA /2000	Research	128	**87.51** 187	110000 20000
238	IBM SP PC604e 332 MHz	BMW AG Muenchen Germany /2000	Industry Automotive	206	**87** 136	. .
239	IBM SP PC604e 332 MHz	State of Ohio USA /2000	Government	206	**87** 136	. .
240	SGI ORIGIN 3000 400 MHz	ERDC MSRC Vicksburg USA /2000	Research	128	**85.44** 102.4	65536 .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	**R_{max}** R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
241	SGI ORIGIN 3000 400 MHz	ERDC MSRC Vicksburg USA /2000	Research	128	**85.44** 102.4	65536 .
242	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
243	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
244	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
245	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
246	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
247	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
248	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
249	SGI ORIGIN 3000 400 MHz	SARA (Stichting Academisch Rekencentrum) Amsterdam Netherlands /2000	Academic	128	**85.44** 102.4	65536 .
250	SGI ORIGIN 3000 400 MHz	Silicon Graphics Mountain View USA /2000	Vendor	128	**85.44** 102.4	65536 .
251	SGI ORIGIN 3000 400 MHz	Silicon Graphics Mountain View USA /2000	Vendor	128	**85.44** 102.4	65536 .
252	SGI ORIGIN 3000 400 MHz	Silicon Graphics Mountain View USA /2000	Vendor	128	**85.44** 102.4	65536 .
253	SGI ORIGIN 3000 400 MHz	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	128	**85.44** 102.4	65536 .
254	SGI ORIGIN 3000 400 MHz	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	128	**85.44** 102.4	65536 .
255	SGI ORIGIN 3000 400 MHz	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	128	**85.44** 102.4	65536 .
256	SGI ORIGIN 3000 400 MHz	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	128	**85.44** 102.4	65536 .
257	SGI ORIGIN 3000 400 MHz	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	128	**85.44** 102.4	65536 .
258	SGI ORIGIN 3000 400 MHz	US Army Research Laboratory (ARL) Aberdeen USA /2000	Research	128	**85.44** 102.4	65536 .
259	SGI ORIGIN 3000 400 MHz	University of Leicester Leicester UK /2000	Academic	128	**85.44** 102.4	65536 .
260	IBM SP PC604e 332 MHz	Aetna Life Insurance Middletown USA /1999	Industry Database	200	**84.5** 132	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	**R_{max}** R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
261	IBM SP PC604e 332 MHz	Prudential Insurance USA /1999	Industry Finance	200	**84.5** 132	. .
262	IBM SP PC604e 332 MHz	Sprint USA /1999	Industry Telecomm	200	**84.5** 132	. .
263	IBM SP PC604e 332 MHz	Sprint USA /1999	Industry Telecomm	200	**84.5** 132	. .
264	IBM SP Power3 375 MHz	Aetna Life Insurance Middletown USA /2000	Industry Database	80	**84** 120	. .
265	IBM SP Power3 375 MHz	Credit Suisse Zurich Switzerland /2000	Industry Finance	80	**84** 120	. .
266	IBM SP Power3 375 MHz	Financial Company Japan /2000	Industry Finance	80	**84** 120	. .
267	IBM SP Power3 375 MHz	Kroger USA /2000	Industry	80	**84** 120	. .
268	IBM SP Power3 375 MHz	Manufacturing Company Japan /2000	Industry Manufacturing	80	**84** 120	. .
269	IBM SP Power3 375 MHz	Philips Lighting USA /2000	Industry	80	**84** 120	. .
270	IBM SP Power3 375 MHz	Postes Telecom Belgium /2000	Industry Telecomm	80	**84** 120	. .
271	IBM SP Power3 375 MHz	Volvo Gothenberg Sweden /2000	Industry Automotive	80	**84** 120	. .
272	IBM SP PC604e 332 MHz	ULC USA /2000	Industry	196	**82.8** 130	. .
273	Cray Inc. T3E900	KIST/System Engineering Research Institute (SSC) Korea /1997	Industry In.Pr. Service	132	**82.1** 118.8	. .
274	Cray Inc. T3E900	NOAA/Geophysical Fluid Dynamics Laboratory (GFDL) Princeton USA /1997	Research Weather	132	**82.1** 118.8	. .
275	IBM SP PC604e 332 MHz	NAC RE International USA /2000	Industry	194	**82** 128	. .
276	SGI ORIGIN 2000 400 MHz	Silicon Graphics Eagan USA /2000	Vendor	128	**81.76** 102.4	65536 .
277	SGI ORIGIN 2000 400 MHz	Silicon Graphics Eagan USA /2000	Vendor	128	**81.76** 102.4	65536 .
278	SGI ORIGIN 2000 400 MHz	University of Manchester Manchester UK /2000	Academic	128	**81.76** 102.4	65536 .
279	Cray Inc. T3E	Commissariat a l'Energie Atomique (CEA) Bruyeres France /1997	Research	188	**81.3** 112.8	. .
280	IBM SP PC604e 332 MHz	Autozone Memphis USA /1999	Industry Database	192	**81.1** 127	. .

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N $_{world}$	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
281	IBM SP Power3 222 MHz	Dupont USA /2000	Industry	128	**80.83** 113.6	76000 15000
282	Sun HPC 10000 400 MHz Cluster	Aerotek Hanover USA /1999	Industry Manufacturing	128	**80.1** 102.4	57120 10752
283	Sun HPC 10000 400 MHz Cluster	Ameritrade Inc. Omaha USA /2000	Industry Finance	128	**80.1** 102.4	57120 10752
284	Sun HPC 10000 400 MHz Cluster	Baker Hughes Houston USA /1999	Industry Geophysics	128	**80.1** 102.4	57120 10752
285	Sun HPC 10000 400 MHz Cluster	Clearstream Services Grande Duchesse Luxembourg /2000	Industry Finance	128	**80.1** 102.4	57120 10752
286	Sun HPC 10000 400 MHz Cluster	Deutsche Telekom AG Bamberg Germany /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
287	Sun HPC 10000 400 MHz Cluster	E-commerce Santa Clara USA /2000	Industry WWW	128	**80.1** 102.4	57120 10752
288	Sun HPC 10000 400 MHz Cluster	Internet Service Provider Italy /2000	Industry WWW	128	**80.1** 102.4	57120 10752
289	Sun HPC 10000 400 MHz Cluster	Lexis Nexis Miamisburg USA /2000	Industry Infor. Service	128	**80.1** 102.4	57120 10752
290	Sun HPC 10000 400 MHz Cluster	Motorola Schaumburg USA /2000	Industry Electronics	128	**80.1** 102.4	57120 10752
291	Sun HPC 10000 400 MHz Cluster	OfficeMax Shaker Heights USA /1999	Industry Database	128	**80.1** 102.4	57120 10752
292	Sun HPC 10000 400 MHz Cluster	RandomHouse Westminster USA /1999	Industry Database	128	**80.1** 102.4	57120 10752
293	Sun HPC 10000 400 MHz Cluster	Rutgers University Piscataway USA /1999	Academic	128	**80.1** 102.4	57120 10752
294	Sun HPC 10000 400 MHz Cluster	Stanford University/High Energy Physics Palo Alto USA /2000	Academic	128	**80.1** 102.4	57120 10752
295	Sun HPC 10000 400 MHz Cluster	Telecommunication Company Sydney Australia /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
296	Sun HPC 10000 400 MHz Cluster	Telemar Brazil /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
297	Sun HPC 10000 400 MHz Cluster	W.W. Grainger Niles USA /2000	Industry Database	128	**80.1** 102.4	57120 10752
298	Sun HPC 10000 400 MHz Cluster	eBay Santa Clara USA /2000	Industry WWW	128	**80.1** 102.4	57120 10752
299	Sun HPC 10000 400 MHz Cluster	Automotive Acheres France /2000	Industry Automotive	128	**80.1** 102.4	57120 10752
300	Sun HPC 10000 400 MHz Cluster	Bank London UK /2000	Industry Finance	128	**80.1** 102.4	57120 10752

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N $_{world}$	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
301	Sun HPC 10000 400 MHz Cluster	BellSouth Birmingham USA /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
302	Sun HPC 10000 400 MHz Cluster	Consulting London UK /2000	Industry	128	**80.1** 102.4	57120 10752
303	Sun HPC 10000 400 MHz Cluster	Convergys Corporation Lake Mary USA /2000	Industry Finance	128	**80.1** 102.4	57120 10752
304	Sun HPC 10000 400 MHz Cluster	E-commerce Chiyoda-ku Japan /2000	Industry WWW	128	**80.1** 102.4	57120 10752
305	Sun HPC 10000 400 MHz Cluster	Electronics USA /2000	Industry	128	**80.1** 102.4	57120 10752
306	Sun HPC 10000 400 MHz Cluster	Ford Motor Company Brentwood UK /2000	Industry Automotive	128	**80.1** 102.4	57120 10752
307	Sun HPC 10000 400 MHz Cluster	Internet Kyushu Japan /2000	Industry WWW	128	**80.1** 102.4	57120 10752
308	Sun HPC 10000 400 MHz Cluster	Internet Osaka Japan /2000	Industry WWW	128	**80.1** 102.4	57120 10752
309	Sun HPC 10000 400 MHz Cluster	Jside.Com Tokyo Japan /2000	Industry	128	**80.1** 102.4	57120 10752
310	Sun HPC 10000 400 MHz Cluster	Oil Company Calgary Canada /2000	Industry Geophysics	128	**80.1** 102.4	57120 10752
311	Sun HPC 10000 400 MHz Cluster	Telecommunication Milano Italy /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
312	Sun HPC 10000 400 MHz Cluster	Telecommunication Company Fort Wayne USA /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
313	Sun HPC 10000 400 MHz Cluster	Telecommunication Company Freehold USA /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
314	Sun HPC 10000 400 MHz Cluster	Telecommunication Company Little Rock USA /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
315	Sun HPC 10000 400 MHz Cluster	Telecommunication Company Sacramento USA /2000	Industry Telecomm	128	**80.1** 102.4	57120 10752
316	IBM SP Power3 375 MHz	TRW Cleveland USA /2000	Industry Automotive	76	**79.9** 114	. .
317	IBM SP Power3 375 MHz	ThyssenKrupp Information Systems Germany /2000	Industry Mechanics	76	**79.9** 114	. .
318	IBM SP PC604e 332 MHz	Deutsche Bank Frankfurt Germany /1999	Industry Finance	188	**79.5** 124	. .
319	IBM SP P2SC 160 MHz	Government UK /1999	Classified	178	**78.4** 113.9	. .
320	IBM SP Power3 375 MHz	GWA Web USA /2000	Industry	74	**77.9** 111	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
321	IBM SP Power3 375 MHz	comdirekt Bank Germany /2000	Industry Finance	74	**77.9** 111	. .
322	IBM SP PC604e 332 MHz	RWE Germany /2000	Industry	184	**77.8** 122	. .
323	IBM SP PC604e 332 MHz	TELUS Communications Inc. Canada /1998	Industry Telecomm	184	**77.8** 122	. .
324	NEC SX-4/40H2	HWW/Universitaet Stuttgart Stuttgart Germany /1999	Industry	40	**77.2** 80	. .
325	Sun HPC 420 450 MHz Cluster	Internet Service Provider USA /2000	Industry WWW	112	**77.01** 100.8	. .
326	SGI ORIGIN 2000	Naval Oceanographic Office (NAVOCEANO) Bay Saint Louis USA /1999	Research Aerospace	256	**76.9** 99.84	. .
327	IBM SP Power3 200 MHz	Deutsche Telekom AG Darmstadt Germany /1999	Industry Telecomm	128	**76.77** 102	89000 11500
328	IBM SP Power3 200 MHz	IBM Research Switzerland /1999	Research	128	**76.77** 102	89000 11500
329	IBM SP Power3 375 MHz	British Airways UK /2000	Industry Transportation	72	**75.9** 108	. .
330	IBM SP Power3 375 MHz	Ensign Geophysics UK /2000	Industry Geophysics	72	**75.9** 108	. .
331	IBM SP Power3 375 MHz	Georgia Institute of Technology Atlanta USA /2000	Research	72	**75.9** 108	. .
332	Sun HPC 10000 400 MHz Cluster	Bank Leeds UK /2000	Industry Finance	120	**75.8** 96	. .
333	Sun HPC 10000 400 MHz Cluster	Dutchtone Den Haag Netherlands /2000	Industry Telecomm	120	**75.8** 96	. .
334	Sun HPC 10000 400 MHz Cluster	T-Online Weiterstadt Germany /2000	Industry Telecomm	120	**75.8** 96	. .
335	Sun HPC 10000 400 MHz Cluster	Telecommunication Italy /2000	Industry Telecomm	120	**75.8** 96	. .
336	Sun HPC 10000 400 MHz Cluster	Telecommunication Italy /2000	Industry Telecomm	120	**75.8** 96	. .
337	Sun HPC 10000 400 MHz Cluster	Media Barcelona Spain /2000	Industry	80	**75.8** 64	. .
338	IBM SP PC604e 332 MHz	FT UEI Antony France /2000	Industry	178	**75.2** 118	. .
339	Sun HPC 10000 400 MHz Cluster	debis Systemhaus Stuttgart Germany /1999	Industry Automotive	120	**74.89** 96	. .
340	Cray Inc. T3E	NRI for Earth Science and Disaster (NIED) Japan /1997	Research	172	**74.5** 103.2	. .

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N $_{world}$	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
341	IBM SP Power3 200 MHz	Lockheed Martin USA /1999	Industry Aerospace	124	**74.4** 99.2	. .
342	IBM SP Power3 375 MHz	Deere and Company USA /2000	Industry	70	**73.8** 105	. .
343	IBM SP PC604e 332 MHz	2 The Mart USA /1999	Industry	174	**73.6** 115	. .
344	IBM SP PC604e 332 MHz	ThyssenKrupp Information Systems Germany /2000	Industry Database	236	**73.1** 156	. .
345	SGI ORIGIN 2000 300 MHz - Eth-Cluster	Norwegian University of Science and Technology Trondheim Norway /2000	Academic	160	**72.57** 96	61440 .
346	IBM SP PC604e 332 MHz	Deutsche Bank Germany /2000	Industry Finance	170	**71.9** 112	. .
347	IBM SP Power3 375 MHz	Adapco USA /2000	Industry Mechanics	68	**71.8** 102	. .
348	SGI ORIGIN 2000 400 MHz	IUCC/HPCU Tel-Aviv Israel /2000	Academic	112	**71.7** 89.6	. .
349	SGI ORIGIN 2000 400 MHz	Saab Automobile AB Trollhatten Sweden /2000	Industry Automotive	112	**71.7** 89.6	. .
350	Cray Inc. T3E	Government USA /1997	Classified	164	**71.1** 98.4	. .
351	IBM SP PC604e 332 MHz	Zuerich Versicherung Switzerland /2000	Industry Database	168	**71** 111	. .
352	IBM SP Power3 222 MHz	European Patent Office Munich Germany /2000	Government	112	**71** 99.4	. .
353	IBM SP Power3 375 MHz 16 way	NASA/Goddard Space Flight Center Greenbelt USA /2000	Research Aerospace	64	**70.6** 96	54000 11000
354	IBM SP Power3 375 MHz 16 way	Universite des Sciences et Technologies de Lille Lille France /2000	Academic	64	**70.6** 96	54000 11000
355	IBM SP PC604e 332 MHz	Deutsche Bank Switzerland /1999	Industry Finance	166	**70.2** 110	. .
356	Sun HPC 10000 400 MHz Cluster	Computer Manufacturer Santa Ana USA /2000	Industry Manufacturing	112	**70.12** 89.6	. .
357	Sun HPC 10000 400 MHz Cluster	Prudential Insurance Dudley UK /1999	Industry Database	112	**70.12** 89.6	. .
358	Sun HPC 10000 400 MHz Cluster	ATT Bothell USA /2000	Industry Telecomm	112	**70.12** 89.6	. .
359	IBM SP Power3 375 MHz	Joy Tech USA /2000	Industry	66	**69.8** 99	. .
360	IBM SP PC604e 332 MHz	DeTeCSM Bonn Germany /1999	Industry In.Pr. Service	164	**69.4** 108	. .

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N $_{world}$	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
361	NEC SX-4/36H2	National Institute for Environmental Studies Tsukuba Japan /1997	Research Environment	36	**69.4** 72	. .
362	IBM SP2/402	Chip Manufacturer (B) USA /1997	Industry Electronics	402	**69.33** 106.53	. .
363	Sun HPC 10000 400 MHz Cluster	KT Freetel Seoul Korea /1999	Industry Telecomm	110	**68.77** 88	. .
364	IBM SP PC604e 332 MHz	BASF Ludwigshafen Germany /1999	Industry Chemistry	162	**68.5** 107	. .
365	IBM SP PC604e 332 MHz	Dresdner Bank Germany /2000	Industry	162	**68.5** 107	. .
366	IBM SP P2SC 120 MHz	Centre Informatique National (CINES) Montpellier France /1999	Academic	207	**67.8** 99.36	. .
367	IBM SP Power3 375 MHz	C4 / Centre Europeo del Parallelismo de Barcelona Barcelona Spain /2000	Academic	64	**67.78** 96	76000 10400
368	IBM SP Power3 375 MHz	CINECA Bologna Italy /2000	Academic	64	**67.78** 96	76000 10400
369	IBM SP Power3 375 MHz	Caltech Pasadena USA /2000	Academic	64	**67.78** 96	76000 10400
370	IBM SP Power3 375 MHz	Dassault Aviation France /2000	Industry Aerospace	64	**67.78** 96	76000 10400
371	IBM SP Power3 375 MHz	Ensign Geophysics UK /2000	Industry Geophysics	64	**67.78** 96	76000 10400
372	IBM SP Power3 375 MHz	IBM Poughkeepsie USA /2000	Vendor	64	**67.78** 96	76000 10400
373	IBM SP Power3 375 MHz	Indiana University USA /2000	Academic	64	**67.78** 96	76000 10400
374	IBM SP Power3 375 MHz	Manufacturing Company Japan /2000	Industry Manufacturing	64	**67.78** 96	76000 10400
375	IBM SP Power3 375 MHz	Manufacturing Company Japan /2000	Industry Manufacturing	64	**67.78** 96	76000 10400
376	IBM SP Power3 375 MHz	National Cancer Institute USA /2000	Research	64	**67.78** 96	76000 10400
377	IBM SP Power3 375 MHz	Norwest Corp. USA /2000	Industry Finance	64	**67.78** 96	76000 10400
378	IBM SP Power3 375 MHz	PSA Peugeot Citroen France /2000	Industry Automotive	64	**67.78** 96	76000 10400
379	IBM SP Power3 375 MHz	Philip Morris USA /2000	Industry	64	**67.78** 96	76000 10400
380	IBM SP Power3 375 MHz	Science Applications International Corporation (SAIC) USA /2000	Industry	64	**67.78** 96	76000 10400

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
381	IBM SP Power3 375 MHz	Volvo Gothenberg Sweden /2000	Industry Automotive	64	**67.78** 96	76000 10400
382	IBM SP Power3 375 MHz	Western Geophysical Houston USA /2000	Industry Geophysics	64	**67.78** 96	76000 10400
383	IBM SP PC604e 332 MHz	SOGEI Italy /1998	Government	160	**67.7** 106	
384	IBM SP PC604e 332 MHz	Telecom Italia Italy /1998	Industry Telecomm	160	**67.7** 106	
385	Cray Inc. T3E900	Government USA /1998	Classified	108	**67.6** 97.2	
386	Sun HPC 10000 333 MHz Cluster	Telecommunications Kanagawa Japan /2000	Industry Telecomm	128	**66.93** 85.2	57120 10080
387	IBM SP PC604e 332 MHz	Government France /1999	Classified	158	**66.8** 104	
388	SGI ORIGIN 2000 250 MHz - Eth-Cluster	NASA/Ames Research Center/NAS Mountain View USA /2000	Research Aerospace	192	**66.7** 96	
389	SGI ORIGIN 2000 400 MHz	University of Arizona Tucson USA /2000	Academic	104	**66.6** 83.2	
390	IBM SP PC604e 332 MHz	Federal Express USA /1999	Industry Database	156	**66** 103	
391	IBM SP PC604e 332 MHz	TRW Cleveland USA /1999	Industry Automotive	156	**66** 103	
392	Sun HPC 420 450 MHz Cluster	Monsanto Cambridge USA /2000	Industry Biology	96	**65.8** 86.4	
393	Sun HPC 450 400 MHz Cluster	Monsanto St. Loius USA /2000	Industry Biology	96	**65.8** 76.8	
394	IBM SP P2SC 160 MHz	KTH - Royal Institute of Technology Stockholm Sweden /1998	Research	146	**64.8** 93.44	
395	Sun HPC 10000 400 MHz Cluster	Telecommunication Rio de Janeiro Brazil /2000	Industry Telecomm	104	**64.73** 83.2	
396	Self-made SCore II/PIII 800 MHz	Real World Computing (RWCP)/Tsukuba Research Center Tsukuba-shi Japan /2000	Research	132	**64.7** 105	58000 8000
397	SGI ORIGIN 3000 400 MHz	Centre Informatique National (CINES) Montpellier France /2000	Research	96	**64.2** 76.8	
398	Hewlett-Packard N4000 440 MHz/HyperPlex	DaimlerChrysler USA /2000	Industry Automotive	96	**63.8** 168.96	
399	Hewlett-Packard N4000 440 MHz/HyperPlex	University of Kentucky Lexington USA /2000	Academic	96	**63.8** 168.96	
400	Hewlett-Packard N4000 440 MHz/HyperPlex	VW (Volkswagen AG) Wolfsburg Germany /2000	Industry Automotive	96	**63.8** 168.96	

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	**R_{max}** R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
401	Compaq AlphaServer SC ES40/EV67	Los Alamos National Laboratory Los Alamos USA /2000	Research	64	**63.8** 85.4	53000 9000
402	Compaq AlphaServer SC ES40/EV67	Oak Ridge National Laboratory Oak Ridge USA /2000	Research	64	**63.8** 85.4	53000 9000
403	Compaq AlphaServer SC ES40/EV67	Wright-Patterson Air Force Base/DoD ASC USA /2000	Research	64	**63.8** 85.4	53000 9000
404	IBM SP Power3 375 MHz	Canadian National Defense Canada /2000	Classified	60	**63.6** 90	. .
405	IBM SP Power3 375 MHz	Osaka University - Research Center for Nuclear Physics Osaka Japan /2000	Academic	60	**63.6** 90	. .
406	IBM SP Power3 375 MHz	Pioneer-Standard Electronics USA /2000	Industry	60	**63.6** 90	. .
407	IBM SP Power3 375 MHz	Soccer Lottery Japan /2000	Government	60	**63.6** 90	. .
408	SGI ORIGIN 2000	Sandia National Labs Albuquerque USA /1997	Research	208	**63.1** 81.12	. .
409	IBM SP Power3 200 MHz	Deutsche Telekom AG Darmstadt Germany /1999	Industry Telecomm	104	**62.9** 82.9	. .
410	IBM SP PC604e 332 MHz	Axone France /2000	Industry	148	**62.6** 98.2	. .
411	IBM SP PC604e 332 MHz	Bank of America USA /1999	Industry Finance	148	**62.6** 98.2	. .
412	IBM SP PC604e 332 MHz	Sony Data UK /1999	Industry	148	**62.6** 98.2	. .
413	Self-made NT Supercluster	NCSA Urbana-Champaign USA /1999	Research	256	**62.59** 140.8	122500 20500
414	Sun HPC 4500 400 MHz Cluster	Internet USA /2000	Industry WWW	110	**62.27** 88	. .
415	SGI ORIGIN 2000 300 MHz	Boeing Company Huntsville USA /1999	Industry Aerospace	128	**62.25** 76.8	60032 9000
416	SGI ORIGIN 2000 300 MHz	CSC (Centre for Sientific Computing) Espoo Finland /1999	Academic	128	**62.25** 76.8	60032 9000
417	SGI ORIGIN 2000 300 MHz	DaimlerChrysler Detroit USA /1999	Industry Automotive	128	**62.25** 76.8	60032 9000
418	SGI ORIGIN 2000 300 MHz	DaimlerChrysler Detroit USA /1999	Industry Automotive	128	**62.25** 76.8	60032 9000
419	SGI ORIGIN 2000 300 MHz	Fleet Numerical Meteorology and Oceanography Center Monterey USA /1999	Research Weather	128	**62.25** 76.8	60032 9000
420	SGI ORIGIN 2000 300 MHz	Ford Motor Company USA /1999	Industry Automotive	128	**62.25** 76.8	60032 9000

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N $_{world}$	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
421	SGI ORIGIN 2000 300 MHz	NASA/JPL Pasadena USA /1999	Research	128	**62.25** 76.8	60032 9000
422	SGI ORIGIN 2000 300 MHz	Princeton University Princeton USA /1999	Academic	128	**62.25** 76.8	60032 9000
423	SGI ORIGIN 2000 300 MHz	Tohoku University, Institute of Fluid Science Aramaki Japan /1999	Academic	128	**62.25** 76.8	60032 9000
424	SGI ORIGIN 2000 300 MHz	US Army Research Laboratory (ARL) Aberdeen USA /1999	Research	128	**62.25** 76.8	60032 9000
425	SGI ORIGIN 2000 300 MHz	US Army Research Laboratory (ARL) Aberdeen USA /1999	Research	128	**62.25** 76.8	60032 9000
426	SGI ORIGIN 2000 300 MHz	University of Tokyo/Institute for Solid State Physics Tokyo Japan /1999	Academic	128	**62.25** 76.8	60032 9000
427	SGI ORIGIN 2000 300 MHz	University of Tokyo/Institute for Solid State Physics Tokyo Japan /1999	Academic	128	**62.25** 76.8	60032 9000
428	SGI ORIGIN 2000 300 MHz	University of Tokyo/Institute for Solid State Physics Tokyo Japan /1999	Academic	128	**62.25** 76.8	60032 9000
429	Hewlett-Packard V2600/HyperPlex	Amazon.com USA /2000	Industry WWW	64	**62** 141.31	. .
430	IBM SP Power3 375 MHz 16 way	Ahold USA /2000	Industry	56	**62** 84	. .
431	IBM SP PC604e 332 MHz	Atraxis AG Switzerland /2000	Industry Transportation	146	**61.8** 96.9	. .
432	NEC SX-4/32	NEC Fuchu Plant Tokyo Japan /1995	Vendor Benchmarking	32	**61.7** 64	20480 1688
433	IBM SP Power3 375 MHz	Pitney Bowes USA /2000	Industry	58	**61.5** 87	. .
434	Compaq Alphleet Cluster	Institute of Physical and Chemical Res. (RIKEN) Wako Japan /1999	Research	140	**61.3** 140	56000 22000
435	IBM SP PC604e 332 MHz	APAC Hong Kong (EHU) Netherlands /1999	Industry	144	**60.9** 95.6	. .
436	IBM SP PC604e 332 MHz	EVE Bank Switzerland /1999	Industry Finance	144	**60.9** 95.6	. .
437	IBM SP PC604e 332 MHz	France Telecom France /2000	Industry Telecomm	144	**60.9** 95.6	. .
438	IBM SP PC604e 332 MHz	Merck Germany /1999	Industry Pharmaceutics	144	**60.9** 95.6	. .
439	IBM SP PC604e 332 MHz	Rabobank NED USA /2000	Industry	144	**60.9** 95.6	. .
440	IBM SP PC604e 332 MHz	UBS AG Switzerland /1999	Industry Finance	144	**60.9** 95.6	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
441	NEC SX-5/16Be	German Aerospace Laboratory (DLR) Goettingen Germany /2000	Research Aerospace	16	**60.7** 64	. .
442	Sun HPC 10000 400 MHz Cluster	BellSouth Charlotte USA /2000	Industry Telecomm	64	**59.7** 51.2	. .
443	Sun HPC 10000 400 MHz Cluster	Internet Yokohama Japan /2000	Industry WWW	64	**59.7** 51.2	. .
444	Fujitsu VPP500/42	Japan Atomic Energy Research Japan /1994	Research	42	**59.6** 67.2	. .
445	NEC SX-5/8B	National Aerospace Laboratory (NLR) Noordoostpolder Netherlands /1999	Research Aerospace	8	**59.6** 64	. .
446	NEC SX-5/8A	Swiss Scientific Computing Center (CSCS) Manno Switzerland /1999	Research	8	**59.6** 64	. .
447	NEC SX-5/8B	Veritas DGC Crawley UK /2000	Industry Geophysics	8	**59.6** 64	. .
448	IBM SP Power3 375 MHz	Bank of Boston Pasadena USA /2000	Industry Finance	56	**59.4** 84	. .
449	IBM SP Power3 375 MHz	Finance Company Canada /2000	Industry Finance	56	**59.4** 84	. .
450	IBM SP Power3 375 MHz	First Union National Bank USA /2000	Industry Finance	56	**59.4** 84	. .
451	IBM SP Power3 375 MHz	Frito Lay USA /2000	Industry	56	**59.4** 84	. .
452	IBM SP Power3 375 MHz	Manufacturer Japan /2000	Industry Finance	56	**59.4** 84	. .
453	IBM SP Power3 375 MHz	Prudential Securities New York USA /2000	Industry	56	**59.4** 84	. .
454	IBM SP Power3 375 MHz	Sherbrooke University Sherbrooke Canada /2000	Academic	56	**59.4** 84	. .
455	IBM SP Power3 375 MHz	United Healthcare USA /2000	Industry Database	56	**59.4** 84	. .
456	IBM SP Power3 375 MHz	West Publishing USA /2000	Industry	56	**59.4** 84	. .
457	IBM SP PC604e 332 MHz	Atomic Weapons Establishment Aldermaston UK /1998	Classified	140	**59.3** 92.9	. .
458	IBM SP PC604e 332 MHz	Sears USA /1998	Industry Database	140	**59.3** 92.9	. .
459	SGI ORIGIN 2000 300 MHz	Lunds Tekniska Hvgskola Sweden /1999	Academic	116	**59.1** 69.6	. .
460	Sun HPC 10000 400 MHz Cluster	Deutsche Telekom AG Bamberg Germany /2000	Industry Telecomm	96	**59.04** 76.8	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
461	Sun HPC 10000 400 MHz Cluster	Finance Company Reston USA /2000	Industry Finance	96	**59.04** 76.8	. .
462	Sun HPC 10000 400 MHz Cluster	NIIFD Budapest Hungary /2000	Academic	96	**59.04** 76.8	. .
463	Sun HPC 10000 400 MHz Cluster	Oil Company Paris France /1999	Industry	96	**59.04** 76.8	. .
464	Sun HPC 10000 400 MHz Cluster	Pharmaceutical Stevenage UK /2000	Industry Pharmaceutics	96	**59.04** 76.8	. .
465	Sun HPC 10000 400 MHz Cluster	Telecommunications Warsaw Poland /2000	Industry	96	**59.04** 76.8	. .
466	Sun HPC 10000 400 MHz Cluster	University of Queensland Queensland Australia /2000	Academic	96	**59.04** 76.8	. .
467	Sun HPC 10000 400 MHz Cluster	E-commerce London UK /2000	Industry WWW	96	**59.04** 76.8	. .
468	Hitachi SR2201/256	Hitachi Mechanical Engineering Res. Lab. Japan /1998	Research	256	**58.68** 77	77760 13440
469	Hitachi SR2201/256	Real World Computing (RWCP) Tokyo Japan /1997	Research	256	**58.68** 77	77760 13440
470	Hitachi SR2201/256	University of Cambridge Cambridge UK /1998	Academic	256	**58.68** 77	77760 13440
471	Hitachi SR2201/256	University of Tokyo/Human Genome Center, IMS Tokyo Japan /1998	Academic	256	**58.68** 77	77760 13440
472	SGI ORIGIN 2000	Boston University Boston USA /1997	Academic	192	**58.6** 74.88	. .
473	IBM SP PC604e 332 MHz	Lloyds Bank Plc UK /2000	Industry Finance	138	**58.4** 91.6	. .
474	IBM SP Power3 200 MHz	Geco-Prakla Gatwick UK /2000	Industry Geophysics	96	**58.3** 76.6	. .
475	IBM SP Power3 200 MHz	Volvo Gothenberg Sweden /2000	Industry Automotive	96	**58.3** 76.6	. .
476	Cray Inc. T3E	AWI (Alfred Wegener Institut) Bremerhaven Germany /1998	Research	134	**58.2** 80.4	. .
477	Cray Inc. T3E	Japan Adv. Inst. of Science and Technology (JAIST) Hokuriku Japan /1997	Academic	134	**58.2** 80.4	. .
478	Cray Inc. T3E	Technical University Delft (TUD) Delft Netherlands /1997	Academic	134	**58.2** 80.4	. .
479	Fujitsu VPP700/26E	Meteo-France Toulouse France /1997	Research Weather	26	**58** 62.4	74880 5200
480	IBM SP PC604e 332 MHz	AI Informatics GmbH (AII) Austria /2000	Industry Database	136	**57.6** 90.2	. .

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N *world*	Manufacturer Computer	Installation Site Location/Year	Field of Application	# Proc.	$\mathbf{R_{max}}$ R_{peak} [Gflop/s]	N_{max} $N_{1/2}$
481	IBM SP PC604e 332 MHz	Communications Company Japan /2000	Industry	136	**57.6** 90.2	. .
482	IBM SP PC604e 332 MHz	France Telecom Mobile Services (FTMS) France /2000	Industry	136	**57.6** 90.2	. .
483	IBM SP PC604e 332 MHz	Oracle Corporation Redwood Shores USA /1999	Industry Database	136	**57.6** 90.2	. .
484	IBM SP PC604e 332 MHz	Procter and Gamble Belgium /1999	Industry	136	**57.6** 90.2	. .
485	Cray Inc. T3E	Ohio Supercomputer Center Columbus USA /1997	Academic	132	**57.4** 79.2	. .
486	IBM SP P2SC 160 MHz	Oracle/IBM France /1998	Industry Database	128	**57.24** 81.92	39000 9180
487	Fujitsu VPP500/40	National Institute of Genetics Mishima Japan /1995	Research	40	**56.9** 64	. .
488	IBM SP PC604e 332 MHz	PO Container Ltd. UK /2000	Industry Database	134	**56.7** 88.9	. .
489	IBM SP PC604e 332 MHz	Pennsylvania State University USA /1998	Academic	134	**56.7** 88.9	. .
490	IBM SP P2SC 160 MHz	ERDC MSRC Vicksburg USA /1998	Industry Defense	126	**56.37** 80.64	. .
491	Cray Inc. T3E1200	Environmental Protection Agency USA /1999	Research	68	**56.3** 81.6	. .
492	IBM SP Power3 200 MHz	Government UK /1998	Classified	92	**56** 73.4	. .
493	NEC SX-5S/16H4	VW (Volkswagen AG) Wolfsburg Germany /2000	Industry Automotive	16	**56** 64	. .
494	IBM SP PC604e 332 MHz	Auchan France /1999	Industry Database	132	**55.9** 87.6	. .
495	IBM SP S80s 450 MHz	BASF Ludwigshafen Germany /2000	Industry Chemistry	108	**55.8** 97.2	. .
496	IBM SP P2SC 160 MHz	Government France /1999	Classified	124	**55.5** 79.3	. .
497	IBM SP Power3 375 MHz	AP USA /2000	Industry	52	**55.3** 78	. .
498	IBM SP Power3 375 MHz	New York City - Department of Finance USA /2000	Government	52	**55.3** 78	. .
499	IBM SP Power3 375 MHz	Zurich American USA /2000	Industry	52	**55.3** 78	. .
500	IBM SP PC604e 332 MHz	Alcatel France /1999	Industry Telecomm	130	**55.1** 86.3	. .

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4 Statistics on Manufacturers and Continents

As basic statistics of the complete list, we give the number of systems installed with respect to the different manufacturers in the different countries or continents (Table 2) as well as the accumulated R_{max} values (Table 3) and R_{peak} values (Table 4) for those systems. More extensive analyses of the situation and its evolution over time can be found in the series of TOP500Reports (TOP500Report 1993 [3], 1994 [4], 1995 [5] and, 1996 [6]). Customized statistics can be obtained by using WWW at http://www.top500.org.

Table 2: Number of Systems Installed

TOP500 Statistics — Number of Systems Installed					
	USA/Canada	Europe	Japan	others	Total
IBM	108	90	12	5	215
Sun	47	29	8	8	92
SGI	42	17	7	1	67
Cray Inc.	26	17	2	2	47
NEC	2	9	10	2	23
Fujitsu		7	9	1	17
Hitachi		3	13		16
Compaq	8	2	1		11
others	8	3	1		12
Total	241	177	63	19	500

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Table 3: Installed $\mathbf{R_{max}}$

TOP500 Statistics — Installed R_{max} [Gflop/s]					
	USA/Canada	Europe	Japan	others	Total
IBM	26261	8940.0	1043.3	1128.0	37372
Sun	5400.9	2730.3	683.4	718.0	9532.6
SGI	6032.5	1380.7	647.4	71.7	8132.3
Cray Inc.	8266.7	5205.5	132.7	191.4	13796
NEC	365.0	896.7	1354.1	424.0	3039.8
Fujitsu		1785.5	2321.6	139.0	4246.1
Hitachi		1208.7	4911.9		6120.6
Compaq	1821.3	310.2	61.3		2192.8
others	3255.8	303.3	64.7		3623.8
Total	51403	22761	11220	2672.1	88056

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Table 4: Installed $\mathbf{R_{peak}}$

TOP500 Statistics — Installed R_{peak} [Gflop/s]					
	USA/Canada	Europe	Japan	others	Total
IBM	45089	13921	1506.1	1635.0	62152
Sun	7689.6	3680.0	853.2	955.2	13178
SGI	9077.6	1726.4	921.6	89.6	11815
Cray Inc.	11998	7444.0	183.6	277.2	19903
NEC	384.0	960.0	1416.0	448.0	3208.0
Fujitsu		1948.8	2556.2	144.0	4649.0
Hitachi		1549.0	6080.0		7629.0
Compaq	2493.2	466.5	140.0		3099.7
others	5340.3	718.0	105.0		6163.2
Total	82072	32414	13762	3549.0	131797

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