

TOP500 Supercomputer Sites

16th Edition

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TOP500 Supercomputer Sites

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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 conform 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 “Strassen’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 systems 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 Table 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 <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [Gflop/s] | <i>N_{max}</i> <i>N₁</i> |
|-------------------|---|---|-------------------------|------------|--|--|
| 1 | IBM ASCI White, SP Power3 375 MHz | Lawrence Livermore National Laboratory Livermore USA /2000 | Research Energy | 8192 | 4938 12288 | 43000 43000 |
| 2 | Intel ASCI Red | Sandia National Labs Albuquerque USA /1999 | Research | 9632 | 2379 3207 | 36288 7540 |
| 3 | IBM ASCI Blue-Pacific SST, IBM SP 604e | Lawrence Livermore National Laboratory Livermore USA /1999 | Research Energy | 5808 | 2144 3868 | 43134 |
| 4 | SGI ASCI Blue Mountain | Los Alamos National Laboratory Los Alamos USA /1998 | Research | 6144 | 1608 3072 | 37440 13800 |
| 5 | IBM SP Power3 375 MHz | Naval Oceanographic Office (NAVOCEANO) Bay Saint Louis USA /2000 | Research Aerospace | 1336 | 1417 2004 | 37400 |
| 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 | 12000 1516 |
| 8 | IBM SP Power3 375 MHz 8 way | UCSD/San Diego Supercomputer Center San Diego USA /2000 | Research | 1152 | 929 1728 | 22000 6200 |
| 9 | Hitachi SR8000-F1/100 | High Energy Accelerator Research Organization /KEK Tsukuba Japan /2000 | Research | 100 | 917 1200 | 11500 1500 |
| 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 | 19560 1800 |
| 13 | Hitachi SR8000/128 | University of Tokyo Tokyo Japan /1999 | Academic | 128 | 873 1024 | 12000 1600 |
| 14 | Cray Inc. T3E900 | Government USA /1997 | Classified | 1324 | 815 1191.6 | 13440 2688 |
| 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 | 18700 3750 |
| 18 | Hitachi SR8000-E1/80 | Japan Meteorological Agency 4 Japan /2000 | Research Weather | 80 | 691.3 768 | 12000 940 |
| 19 | SGI ORIGIN 2000 250 MHz | Los Alamos National Laboratory/ACL Los Alamos USA /1999 | Research | 2048 | 690.9 1024 | 22924 8064 |
| 20 | IBM SP Power3 375 MHz | NCAR (National Center for Atmospheric Research) Boulder USA /2000 | Research | 668 | 688 1002 | |

TOP500 Supercomputers - Worldwide

| <i>N</i> <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | <i>R</i>_{max} <i>R</i> _{peak} [Gflop/s] | <i>N</i> _m <i>N</i> ₁ |
|--------------------------|---|--|-------------------------|------------|--|--|
| 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 | 8900 1000 |
| 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 | 14800 3300 |
| 28 | IBM SP Power3 375 MHz 16 way | US Army Research Laboratory (ARL) Aberdeen USA /2000 | Research | 512 | 546 768 | 14800 3300 |
| 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 | 20000 3000 |
| 32 | Compaq AlphaServer SC ES40/EV67 | Lawrence Livermore National Laboratory Livermore USA /2000 | Research | 512 | 507.6 683 | 20000 3000 |
| 33 | Fujitsu VPP5000/56 | Nagoya University Nagoya Japan /1999 | Academic | 56 | 492 537.6 | 22840 1270 |
| 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 | 23430 1280 |
| 36 | IBM ASCI Blue-Pacific CTR, IBM SP 604e | Lawrence Livermore National Laboratory Livermore USA /1998 | Research Energy | 1344 | 468.2 892 | 20500 6500 |
| 37 | Hitachi SR8000/64 | Tsukuba Advanced Computing Center - TACC/AIST Tsukuba Japan /1999 | Research | 64 | 449 512 | 9200 910 |
| 38 | Cray Inc. T3E1200 | Cray Inc. Chippewa Falls USA /1998 | Vendor | 540 | 447 648 | 18140 1720 |
| 39 | Cray Inc. T3E1200 | ERDC MSRC Vicksburg USA /1999 | Research Mechanics | 540 | 447 648 | 18140 1720 |
| 40 | Cray Inc. T3E1200 | Forschungszentrum Juelich (FZJ) Juelich Germany /1999 | Research | 540 | 447 648 | 18140 1720 |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} R_{peak} [Gflop/s] | N_{max} $N_{1/2}$ |
|-------------|---------------------------------|---|-------------------------|------------|--------------------------------------|------------------------|
| 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} R_{peak} [Gflop/s] | N_{max} $N_{1/2}$ |
|-------------|------------------------------------|---|-------------------------|------------|--------------------------------------|------------------------|
| 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 |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} R_{peak} [Gflop/s] | N_{max} $N_{1/2}$ |
|-------------|------------------------------------|--|-------------------------|------------|--------------------------------------|------------------------|
| 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 | . . |

TOP500 Supercomputers - Worldwide

| N <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [Gflop/s] | <i>N_{max}</i> <i>N_{1/2}</i> |
|-------------------|---------------------------------|--|-------------------------|------------|--|--|
| 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} R_{peak} [Gflop/s] | N_{max} $N_{1/2}$ |
|-------------|----------------------------------|--|-------------------------|------------|--------------------------------------|------------------------|
| 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 Scientific 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 |

TOP500 Supercomputers - Worldwide

| N <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [Gflop/s] | <i>N_{max}</i> <i>N_{1/2}</i> |
|-------------------|----------------------------------|---|----------------------------|------------|--|--|
| 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 | . . |

TOP500 Supercomputers - Worldwide

| 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 | . . |

TOP500 Supercomputers - Worldwide

| N <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [Gflop/s] | <i>N_{max}</i> <i>N_{1/2}</i> |
|-------------------|--|---|-------------------------|------------|--|--|
| 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 | 101.4 128 | 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 | 92.99 128 | 81920 81920 |
| 220 | SGI ORIGIN 2000 250 MHz - Eth-Cluster | Government USA /1999 | Classified | 256 | 92.99 128 | 81920 81920 |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{peak}^{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 . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} R_{peak} [G flop/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 | . . |

TOP500 Supercomputers - Worldwide

| 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 | . . |

TOP500 Supercomputers - Worldwide

| N <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [Gflop/s] | <i>N_{max}</i> <i>N_{1/2}</i> |
|-------------------|----------------------------------|--|----------------------------|------------|--|--|
| 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 |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | Dutch one 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | . . |

TOP500 Supercomputers - Worldwide

| N <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [G flop/s] | <i>N_{max}</i> <i>N_{1/2}</i> |
|-------------------|----------------------------------|--|---------------------------|------------|---|--|
| 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 |

TOP500 Supercomputers - Worldwide

| N <i>world</i> | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | R_{max} <i>R_{peak}</i> [Gflop/s] |
|-------------------|--|--|-------------------------|------------|--|
| 381 | IBM SP Power3 375 MHz | Volvo Gothenberg Sweden /2000 | Industry Automotive | 64 | 67.78 96 |
| 382 | IBM SP Power3 375 MHz | Western Geophysical Houston USA /2000 | Industry Geophysics | 64 | 67.78 96 |
| 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 |
| 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 |
| 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 |

TOP500 Supercomputers - Worldwide

| 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 Scientific 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 |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | . . |

TOP500 Supercomputers - Worldwide

| N_{world} | Manufacturer Computer | Installation Site Location/Year | Field of Application | # Proc. | 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 | . . |

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 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 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 | 95.2 | 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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