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TOP500 Supercomputers for November 2003

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22nd Edition of TOP500 List of World's Fastest Supercomputers Released

MANNHEIM, Germany; KNOXVILLE, Tenn.; & BERKELEY, Calif. – In what has become a much-anticipated event in the world of high-performance computing, the 22nd edition of the “TOP500” list of the world’s fastest supercomputers was released today (November 16, 2003).

The Earth Simulator supercomputer retains the number one position with its Linpack benchmark performance of 35.86 Tflop/s (“teraflops” or trillions of calculations per second). It was built by NEC and installed last year at the Earth Simulator Center in Yokohama, Japan.

The list of cluster systems in the TOP10 has grown impressively to seven systems. These systems are built with workstations or PCs as building blocks and often connected by special high-speed internal networks. The number of clusters in the full TOP500 grew also again strongly, now totaling 208 systems - up from 149 six months ago. This makes clustered systems the most common computer architecture seen in the TOP500. The importance of this market can also be seen by the fact that most manufacturers are now active in this market segment.

The new TOP500 list, as well as the former lists, can be found on the Web at <http://www.top500.org/>.

The number two position is again held by the ASCI Q system at the U.S. Department of Energy’s Los Alamos National Laboratory. ASCI Q was built by Hewlett-Packard and is based on the AlphaServer SC computer system. With 13.88 Tflop/s, it was the second system ever to exceed the 10 Tflop/s mark.

The third system ever to exceed the 10 Tflop/s mark is the X Cluster at the Virginia Polytechnic Institute measured at 10.28 Tflop/s. This cluster is built with the Apple G5 as building blocks. It uses a Mellanox network based on the new Infinband technology as interconnect.

The fourth system is also a cluster. The Tungsten cluster at NCSA is based on the Dell PowerEdge system with its Pentium4 Xeon processor and uses a Myrinet interconnect. It missed the 10 Tflop/s mark by only a tiny margin with a measured 9.82 Tflop/s.

The list of clusters in the TOP10 continues with the upgraded Itanium2-based Hewlett-Packard system, located at DOE's Pacific Northwest National Laboratory, which uses a Quadrics interconnect. The sixth largest system is the first system in the TOP500 based on AMD's Opteron chip. It was installed by Linux Networx at the Los Alamos National Laboratory and also uses a Myrinet interconnect.

The TOP10 finishes with the IBM SP systems at two other DOE national laboratories (Lawrence Livermore National Laboratory and the National Energy Research Scientific Computing Center (NERSC) at Lawrence Berkeley National Laboratory) ahead of another Pentium4 Xeon-based cluster also at the Lawrence Livermore National Laboratory. Gaining entry into the top 10 positions on the new list now requires achieving a Linpack performance of at least 6.6 Tflop/s.

Already, 131 systems report a Linpack performance exceeding 1 Tflop/s. Performance levels at all positions of the TOP500 list keep growing impressively, driven

by Moore's Law. The total combined performance of all 500 computers on the list exceeded the level of half a "petaflop/s" (or quadrillion of calculations per second). It is now 528 TFlop/s, compared to 375 Tflop/s just six months ago. The "slowest" system on the newest listing is now 403.4 Gflop/s ("gigaflops" or billions of calculations per second), compared to 245.1 Gflop/s six months ago.

The number of systems in the TOP500 list using Intel processors grew in the last six months from 119 to 189, signifying a major shift in this marketplace. With this increase, the Intel processor family is now the most dominant processor used in HPC systems. It is followed by Hewlett-Packard's PA-RISC chips and IBM's Power architecture.

In terms of total performance of all the installed systems, the latest TOP500 edition still shows IBM as the clear leader with 35.4 percent, ahead of HP with 22.7 percent and NEC with 8.7 percent.

Hewlett-Packard was able to hold on to its lead in terms of the number of systems on the list by a small margin. A total of 165 systems on the TOP500 list were installed by Hewlett-Packard, compared to 159 systems by IBM. This time SGI is third in this category with 41 systems. No other company was able to gain more than 6 percent in either of these two categories.

The Cray X1 also appears on the list with 10 systems listed. It is the only computer system currently being built in the U.S. that uses vector processors, as the Earth simulator does. Therefore, the Cray X1 is sometimes seen as a possible U.S. answer to the Earth Simulator. The highest ranked Cray X1 appears on rank 19.

Nine of the TOP10 systems, 50 percent of all 500 systems, and 57 percent of the total performance are installed in the United States. Also, 90 percent of all 500 systems are produced in the United States. These market shares demonstrate the continued and clear leadership of the U.S. in both the production and use of high performance computing.

The TOP500 list is compiled by Hans Meuer of the University of Mannheim, Germany; Erich Strohmaier and Horst Simon of NERSC/Lawrence Berkeley National Laboratory; and Jack Dongarra of the University of Tennessee. The list was released today and will be presented in detail at the SC2003 Conference in Phoenix, AZ, which started Saturday, November 15, and continues through Friday, November 21.

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All changes are from June 2003 to November 2003:

Highlights from the Top 10:

- The Earth Simulator, built by NEC, remains the unchallenged #1.
- ASCI Q at Los Alamos is still #2 at 13.88 TFlop/s.
- The third system ever to exceed the 10 TFlop/s mark is the Terascale Cluster at the Virginia Polytechnic Institute measured at 10.28 TFlop/s. This cluster is built with the Apple G5 as building blocks and is often referred to as the 'SuperMac' in media reports. It uses a Mellanox network based on the new Infinband technology as interconnect.
- The fourth system is also a cluster. The Tungsten cluster at NCSA is a Dell PowerEdge-based system using a Myrinet interconnect. It just missed the 10 TFlop/s mark with a measured 9.82 TFlop/s.
- The list of clusters in the TOP10 continues with the upgraded Itanium2-based Hewlett-Packard system, located at DOE's Pacific Northwest National Laboratory, which uses a Quadrics interconnect.
- #6 is the first system in the TOP500 based on AMD's Opteron chip. It was installed by Linux Networx at the Los Alamos National Laboratory and also uses a Myrinet interconnect.
- The list of cluster systems in the TOP10 has grown impressively to seven systems. The Earth Simulator and the two IBM SP systems at Lawrence Livermore and Lawrence Berkeley national labs are the other three systems.
- With the exception of the leading Earth Simulator, all other TOP10 systems are installed in the U.S.
- The performance of the #10 system jumped to 6.6 TFlop/s.

General highlights from the Top 500:

- The number of systems exceeding the 1 TFlop/s mark running the Linpack benchmark jumped from 59 to 131.
- The last system on the newest list, with 403.4 GFlops/s, was listed at position 290 on the last TOP500 just six month ago. This indicates a turnover rate well above average.
- Total accumulated performance exceeded the level of half a petaflop. It is now 528 TFlop/s, compared to 375 TFlop/s six month ago.
- Entry level is now 403.4 GFlop/s, compared to 245.1 GFlop/s six month ago.
- The entry point for the top 100 moved from 708 GFlop/s to 1.142 TFlop/s.
- A total of 189 systems are now using Intel processors. Six months ago there were 119 Intel-based systems on the list and one year ago only 56.
- 208 systems are now labeled as clusters, up from 149. This makes clustered systems the most common architecture in the TOP500.
- IBM is still leading the list with respect to the total installed performance - and increased its share to 35.4 percent --- up from 31.8 percent one year ago and 34.9

percent 6 months ago. HP is second in installed performance with 22.7 percent and NEC is third with 8.7 percent.

- With respect to the number of systems, Hewlett-Packard topped IBM again by a small margin. HP is at 165 systems (up from 159) and IBM is at 159 systems (up one system) installed. SGI is again third with 41 systems, down from 54.
- No other manufacturer is able to capture more than 6 percent in any category.
- The Cray X1 system appears on the list with 10 installations, with the largest X1 listed at #19.

TOP500 Sublist for November 2003

TOP500 Team

<http://www.top500.org/>



Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
1	The Earth Simulator Center	NEC	Earth-Simulator	Research	Japan	2002	35860.00	5120	40960.00	1075200	266240	Crossbar
2	Los Alamos National Laboratory	Hewlett-Packard	ASCI Q - AlphaServer SC45, 1.25 GHz	Research	United States	2002	13880.00	8192	20480.00	633000	225000	Quadrics
3	Virginia Tech	Self-made	1100 Dual 2.0 GHz Apple G5/Mellanox Infiniband 4X/	Academic	United States	2003	10280.00	2200	17600.00	520000	152000	Infiniband
4	NCSA	Dell	PowerEdge 1750, P4 Xeon 3.06 GHz, Myrinet	Academic	United States	2003	9819.00	2500	15300.00	630000		Myrinet
5	Pacific Northwest National Laboratory	Hewlett-Packard	Cluster Platform 6000 rx2600 Itanium2 1.5 GHz, Qua	Research	United States	2003	8633.00	1936	11616.00	835000	140000	Quadrics
6	Los Alamos National Laboratory	Linux Networx	Opteron 2 GHz, Myrinet	Research	United States	2003	8051.00	2816	11264.00	761160	109208	Myrinet
7	Lawrence Livermore National Laboratory	Linux Networx/Quadrics	MCR Linux Cluster Xeon 2.4 GHz - Quadrics	Research	United States	2002	7634.00	2304	11060.00	350000	75000	Quadrics
8	Lawrence Livermore National Laboratory	IBM	ASCI White, SP Power3 375 MHz	Research	United States	2000	7304.00	8192	12288.00	640000		SP Switch
9	NERSC/LBNL	IBM	SP Power3 375 MHz 16 way	Research	United States	2002	7304.00	6656	9984.00	640000		SP Switch
10	Lawrence Livermore National Laboratory	IBM/Quadrics	xSeries Cluster Xeon 2.4 GHz - Quadrics	Research	United States	2003	6586.00	1920	9216.00	425000	90000	Quadrics
11	National Aerospace Laboratory of Japan	Fujitsu	PRIMEPOWER HPC2500 (1.3 GHz)	Research	Japan	2002	5406.00	2304	11980.00	658800	100080	Crossbar
12	Pittsburgh Supercomputing Center	Hewlett-Packard	AlphaServer SC45, 1 GHz	Academic	United States	2001	4463.00	3016	6032.00	280000	85000	Quadrics
13	NCAR (National Center for Atmospheric Research)	IBM	pSeries 690 Turbo 1.3 GHz	Research	United States	2003	4184.00	1600	8320.00	550000	93000	SP Switch
14	Chinese Academy of Science	lenovo	DeepComp 6800, Itanium2 1.3 GHz, QsNet	Academic	China	2003	4183.00	1024	5324.80	491488		Quadrics
15	Commissariat a l'Energie Atomique (CEA)	Hewlett-Packard	AlphaServer SC45, 1 GHz	Research	France	2001	3980.00	2560	5120.00	360000	85000	Quadrics
16	HPCx	IBM	pSeries 690 Turbo 1.3GHz	Academic	United Kingdom	2002	3406.00	1280	6656.00	317000		SP Switch
17	Forecast Systems Laboratory - NOAA	HPTi	Aspen Systems, Dual Xeon 2.2 GHz - Myrinet2000	Research	United States	2002	3337.00	1536	6758.00	285000	75000	Myrinet
18	Naval Oceanographic Office (NAVOCEANO)	IBM	pSeries 690 Turbo 1.3GHz	Research	United States	2002	3160.00	1184	6156.80			SP Switch
19	Cray Inc.	Cray Inc.	Cray X1	Vendor	United States	2003	2932.90	252	3225.60	338688	44288	Crossbar
20	Government	Cray Inc.	Cray X1	Classified	United States	2003	2932.90	252	3225.60	338688	44288	Crossbar
21	Oak Ridge National Laboratory	Cray Inc.	Cray X1	Research	United States	2003	2932.90	252	3225.60	338688	44288	Crossbar
22	Korea Institute of Science and Technology	IBM	xSeries Xeon 2.4 GHz, Myrinet	Research	Korea, South	2004	2847.00	1024	4915.20	230000		Myrinet
23	ECMWF	IBM	pSeries 690 Turbo 1.3GHz	Research	United Kingdom	2002	2560.00	960	4992.00			SP Switch
24	ECMWF	IBM	pSeries 690 Turbo 1.3GHz	Research	United Kingdom	2002	2560.00	960	4992.00			SP Switch
25	Energy Company	Hewlett-Packard	Cluster Platform 6000 rx5670-4x256, Itanium2 1.3 G	Industry	United States	2003	2556.00	1024	5324.80			Gigabit Ethernet
26	Texas Advanced Computing Center/Univ. of Texas	Dell-Cray	PowerEdge 1750, Pentium4 Xeon 3.06 GHz, Myrinet	Academic	United States	2003	2455.00	600	3672.00	252000		Myrinet
27	Sandia National Laboratories	Intel	ASCI Red	Research	United States	1999	2379.00	9632	3207.00	362880	75400	Proprietary
28	IBM	IBM	pSeries 690 Turbo 1.3GHz	Vendor	Canada	2003	2310.00	864	4492.80	275000	62000	SP Switch
29	Oak Ridge National Laboratory	IBM	pSeries 690 Turbo 1.3GHz	Research	United States	2002	2310.00	864	4492.80	275000	62000	SP Switch
30	Louisiana State University	Atipa Technology	P4 Xeon 1.8 GHz - Myrinet	Academic	United States	2002	2207.00	1024	3686.40	280000	56000	Myrinet
31	Max-Planck-Gesellschaft MPI/IPP	IBM	pSeries 690 Turbo 1.3 GHz	Research	Germany	2003	2198.44	822	4274.40			SP Switch
32	NASA/Goddard Space Flight Center	Hewlett-Packard	AlphaServer SC45, 1 GHz	Research	United States	2002	2164.00	1392	2784.00	320000	40000	Quadrics
33	Lawrence Livermore National Laboratory	IBM	ASCI Blue-Pacific SST, IBM SP 604e	Research	United States	1999	2144.00	5808	3856.50	431344		SP Switch
34	US Army Research Laboratory (ARL)	IBM	pSeries 690 Turbo 1.3GHz	Research	United States	2002	2140.00	800	4160.00			SP Switch
35	NCSA	IBM	TeraGrid, Itanium2 1.3 GHz, Myrinet	Academic	United States	2003	2110.00	512	2662.40	308350		Myrinet
36	Atomic Weapons Establishment	IBM	SP Power3 375 MHz 16 way	Classified	United Kingdom	2002	2106.00	1920	2880.00			SP Switch
37	Deutscher Wetterdienst	IBM	SP Power3 375 MHz 16 way	Research	Germany	2003	2106.00	1920	2880.00			SP Switch
38	University at Buffalo, SUNY, Center for Computational Res.	Dell	PowerEdge 2650 Cluster P4 Xeon 2.4 GHz - Myrinet	Academic	United States	2002	2004.00	600	2880.00	253400	42200	Myrinet
39	National Centers for Environmental Prediction	IBM	pSeries 690 Turbo 1.3GHz	Research	United States	2002	1849.00	704	3660.80	240000	32500	SP Switch
40	National Centers for Environmental Prediction	IBM	pSeries 690 Turbo 1.3GHz	Research	United States	2002	1849.00	704	3660.80	240000	32500	SP Switch
41	SARA (Stichting Academisch Rekencentrum)	SGI	SGI Altix 1.3 GHz	Academic	Netherlands	2003	1793.00	416	2163.00	298799		NUMalink
42	KISTI Supercomputing Center	IBM	pSeries 690 Turbo 1.7 GHz	Research	Korea, South	2003	1760.00	544	3699.20	400000		SP Switch
43	Semiconductor Company (C)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	1755.00	1834	8803.20			Gigabit Ethernet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
44	WETA Digital	IBM	BladeCenter Cluster Xeon 2.8 GHz, Gig-Ethernet	Industry	New Zealand	2003	1755.00	1176	6585.60			Gigabit Ethernet
45	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1755.00	1140	6384.00			Gigabit Ethernet
46	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1755.00	1140	6384.00			Gigabit Ethernet
47	PGS	IBM	xSeries Cluster Xeon 3.06 GHz - Gig-E	Industry	United States	2003	1755.00	1024	6266.88			Gigabit Ethernet
48	WETA Digital	IBM	BladeCenter Cluster Xeon 2.8 GHz, Gig-Ethernet	Industry	New Zealand	2003	1755.00	1080	6048.00			Gigabit Ethernet
49	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1755.00	1030	5768.00			Gigabit Ethernet
50	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1755.00	1028	5756.80			Gigabit Ethernet
51	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1755.00	1028	5756.80			Gigabit Ethernet
52	Compagnie Generale de Geophysique (CGG)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United Kingdom	2003	1755.00	1100	5280.00			Gigabit Ethernet
53	Arizona State University/TGEN	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Academic	United States	2003	1755.00	1048	5030.40			Gigabit Ethernet
54	Paradigm Geophysical	IBM	BladeCenter Cluster Xeon 2.4 GHz, Gig-Ethernet	Research	United States	2003	1755.00	1024	4915.20	335000	41600	Gigabit Ethernet
55	TotalFinaElf	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	France	2003	1755.00	1024	4915.20	335000	41600	Gigabit Ethernet
56	Sandia National Laboratories	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Research	United States	2003	1750.00	512	2867.00			Myrinet
57	Sandia National Laboratories	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Research	United States	2003	1750.00	512	2867.00			Myrinet
58	Westgrid	IBM	BladeCenter Xeon 3.06 GHz, Gig-Ethernet	Academic	Canada	2003	1731.92	1008	6168.96			Gigabit Ethernet
59	Geotrace	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1720.38	1000	5600.00			Gigabit Ethernet
60	University of Tokyo	Hitachi	SR8000/MPP	Academic	Japan	2001	1709.10	1152	2074.00	141000	16000	Crossbar
61	SG SGBI	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	France	2003	1674.23	968	4646.40			Gigabit Ethernet
62	CINECA	IBM	xSeries Xeon 3.06 GHz, Myrinet	Academic	Italy	2003	1669.00	512	3133.44			Myrinet
63	University of Southern California	IBM, Sun, Myricom	Sun Fire V60 2.8 GHz, IBM Netfinity 2 GHz, Myrinet	Academic	United States	2003	1661.00	870	4056.00	210000	65000	Myrinet
64	Leibniz Rechenzentrum	Hitachi	SR8000-F1/168	Academic	Germany	2002	1653.00	168	2016.00	160000	19560	Crossbar
65	Los Alamos National Laboratory	SGI	ASCI Blue Mountain	Research	United States	1998	1608.00	6144	3072.00	374400	138000	HIPPI
66	GX Technology	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	1547.31	880	4224.00			Gigabit Ethernet
67	Sandia National Laboratories	Dell	Vplant Cluster P4 XEON 2.4/2.0 GHz - Myrinet	Research	United States	2002	1504.00	660	2963.00	160000		Myrinet
68	Cornell Theory Center	Dell	PowerEdge 2650 Cluster P4 Xeon 2.4 GHz/MSWindows -	Academic	United States	2003	1503.00	640	3073.00	230400		Gigabit Ethernet
69	DKRZ - Deutsches Klimarechenzentrum	NEC	SX-6/192M24	Research	Germany	2003	1484.00	192	1536.00	200064	15744	Crossbar
70	University of Toronto	Self-made	PowerRACK-HX dual Xeon 2.4 GHz - SMC GigE	Academic	Canada	2003	1455.00	528	2534.40	170000	80000	Gigabit Ethernet
71	US Army HPC Research Center at NCS	Cray Inc.	Cray X1	Research	United States	2003	1448.42	124	1587.20			Crossbar
72	University of Alaska - ARSC	Cray Inc.	Cray X1	Academic	United States	2003	1448.42	124	1587.20			Crossbar
73	IBM Thomas J. Watson Research Center	IBM	BlueGene/L DD1 Prototype (0.5GHz PowerPC 440 w/Cus	Research	United States	2003	1435.00	1024	2048.00	110592		Proprietary
74	Semiconductor Company (E)	IBM	xSeries Cluster Xeon 3.06 GHz - Gig-E	Industry	United States	2003	1431.92	800	4986.00			Gigabit Ethernet
75	Verisign	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	1431.92	800	3840.00			Gigabit Ethernet
76	IBM	IBM	pSeries 690 Turbo 1.7 GHz GigEth	Vendor	United States	2003	1424.00	384	2611.20	325000		Gigabit Ethernet
77	Energy Company	Hewlett-Packard	Cluster Platform 6000 rx4640-4x136 Itanium2 1.3 GH	Industry	United States	2003	1418.00	544	2828.80			Gigabit Ethernet
78	Naval Oceanographic Office (NAVOCEANO)	IBM	SP Power3 375 MHz	Research	United States	2000	1417.00	1336	2004.00	374000		SP Switch
79	CINECA	IBM	pSeries 690 Turbo 1.3GHz	Academic	Italy	2002	1384.00	512	2662.40	200000		SP Switch
80	NCAR (National Center for Atmospheric Research)	IBM	SP Power3 375 MHz 16 way	Research	United States	2001	1382.00	1260	1890.00			SP Switch
81	National Institute for Fusion Science	NEC	SX-7/160M5	Research	Japan	2003	1378.00	160	1412.80	200000	15200	Crossbar
82	Academy of Mathematics and System Science	lenovo	DeepComp 1800 - P4 Xeon 2 GHz - Myrinet	Academic	China	2002	1297.00	512	2048.00	172000		Myrinet
83	Geoscience (D)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	Mexico	2003	1296.35	706	3953.60			Gigabit Ethernet
84	Geoscience (D)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	Mexico	2003	1296.35	706	3953.60			Gigabit Ethernet
85	Geoscience (D)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	Mexico	2003	1296.35	706	3953.60			Gigabit Ethernet
86	University of Liverpool	Dell	PowerEdge 650, 3.06 GHz, Gig Ethernet	Academic	United Kingdom	2003	1212.00	940	5752.80	210000		Gigabit Ethernet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
87	Lawrence Livermore National Laboratory	IBM	SP Power3 375 MHz 16 way	Research	United States	2001	1193.00	1088	1632.00			SP Switch
88	Osaka University	NEC	SX-5/128M8 3.2ns	Academic	Japan	2001	1192.00	128	1280.00	129536	10240	Crossbar
89	National Centers for Environmental Prediction	IBM	SP Power3 375 MHz	Research	United States	2000	1179.00	1104	1656.00			SP Switch
90	Public Sector	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Government	China	2003	1175.19	622	2985.60			Gigabit Ethernet
91	CSC (Center for Scientific Computing)	IBM	pSeries 690 1.1GHz	Academic	Finland	2002	1170.00	512	2253.00			SP Switch
92	Florida State University	IBM	pSeries 690 1.1GHz	Academic	United States	2002	1170.00	512	2253.00			SP Switch
93	Doshisha University	Visual Technology	Opteron 1.8 GHz, Gig Ethernet	Academic	Japan	2003	1169.00	512	1843.20	220000	59000	Gigabit Ethernet
94	Government	Cray Inc.	T3E1200	Classified	United States	2001	1166.00	1900	2280.00	230016		Cray Interconnect
95	ERDC MSRC	Cray Inc.	T3E1200/900	Research	United States	1999	1166.00	1792	1999.00	230016		Cray Interconnect
96	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1146.35	602	3371.20			Gigabit Ethernet
97	Semiconductor Company (D)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	Israel	2003	1143.46	600	3360.00			Gigabit Ethernet
98	Oak Ridge National Laboratory	SGI	SGI Altix 1.5 GHz	Research	United States	2003	1142.00	256	1536.00	334080	46000	NUMalink
99	CSAR at the University of Manchester	SGI	SGI Altix 1.3 GHz	Academic	United Kingdom	2003	1142.00	256	1331.20	334080	46000	NUMalink
100	NASA/Ames Research Center/NAS	SGI	SGI Altix 1.3 GHz	Research	United States	2003	1142.00	256	1331.20	334080	46000	NUMalink
101	Silicon Graphics	SGI	SGI Altix 1.3 GHz	Vendor	United States	2003	1142.00	256	1331.20	334080	46000	NUMalink
102	University of Houston	Hewlett-Packard	Cluster Platform 6000 rx2600 Itanium2 1.3 GHz Clus	Academic	United States	2003	1137.00	304	1580.00			Myrinet
103	National Supercomputer Centre (NSC)	Self-made	Pentium Xeon Cluster 2.2 GHz - SCI 3D	Academic	Sweden	2002	1132.00	400	1760.00	212000	32800	SCI
104	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1114.62	580	3248.00			Gigabit Ethernet
105	Semiconductor Company (F)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	India	2003	1105.96	574	2755.20			Gigabit Ethernet
106	NASA/Goddard Space Flight Center	Self-made	Pentium4 Xeon 2.4 GHz, Myrinet	Research	United States	2003	1104.00	528	2534.40	120000	35000	Myrinet
107	Sony Pictures Imageworks	IBM	xSeries Cluster Xeon 3.06 GHz - Gig-E	Industry	United States	2003	1097.31	568	3476.16			Gigabit Ethernet
108	Australian Centre for Advanced Computing and Communications	Dell	PowerEdge 1750, Pentium4 Xeon 3.06 GHz, GigE	Academic	Australia	2003	1095.00	304	1860.48	179000	40000	Gigabit Ethernet
109	Petroleum Company (G)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	Saudia Arabia	2003	1088.65	562	2697.60			Gigabit Ethernet
110	Nestec S.A.	IBM	pSeries 690 Turbo 1.3GHz	Industry	Switzerland	2003	1081.00	400	2080.00			SP Switch
111	Sandia National Laboratories	Linux Networx	P4 Xeon 3.06 GHz, Infiniband	Research	United States	2003	1076.00	256	1566.72	145000	27350	Infiniband
112	Compagnie Generale de Geophysique (CGG)	Dell	PowerEdge 1750, P4 Xeon 3.06 GHz, GigE	Industry	United States	2003	1068.00	1024	6266.88			Gigabit Ethernet
113	US Army Research Laboratory (ARL)	Linux Networx	Pentium4 Xeon 3.06 GHz, Myrinet	Research	United States	2003	1060.00	256	1566.72	159432	29858	Myrinet
114	Indiana University	IBM	AVIDD-B+AVIDD-I - xSeries Cluster Xeon 2.4 GHz - M	Academic	United States	2003	1058.00	384	1843.00	220000		Myrinet
115	General Motors	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	United States	2003	1057.00	320	1792.00			Myrinet
116	Los Alamos National Laboratory	Linux Networx	Opteron 1.6 GHz, Infiniband	Research	United States	2003	1053.00	512	1638.00	114000	22202	Infiniband
117	University of Kentucky	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HFabric	Academic	United States	2003	1049.00	220	1320.00			Myrinet
118	Applera/Celera Genomics	IBM	pSeries 690 Turbo 1.3GHz	Industry	United States	2002	1038.00	384	1996.80	245000		SP Switch
119	HLRN at Universitaet Hannover / RRZN	IBM	pSeries 690 Turbo 1.3GHz	Academic	Germany	2002	1038.00	384	1996.80	245000		SP Switch
120	HLRN at ZIB/Konrad Zuse-Zentrum fuer Informationstechnik	IBM	pSeries 690 Turbo 1.3GHz	Academic	Germany	2002	1038.00	384	1996.80	245000		SP Switch
121	Lawrence Livermore National Laboratory	Promicro/Quadrics	Pentium4 Xeon 2.8 GHz Cluster - Quadrics	Research	United States	2003	1036.00	256	1433.60	170000	30600	Quadrics
122	Lawrence Livermore National Laboratory	Promicro/Quadrics	Pentium4 Xeon 2.8 GHz Cluster - Quadrics	Research	United States	2003	1036.00	256	1433.60	170000	30600	Quadrics
123	Compagnie Generale de Geophysique (CGG)	IBM	BladeCenter Cluster Xeon 2.8 GHz, Gig-Ethernet	Industry	United Kingdom	2003	1028.08	520	2912.00			Gigabit Ethernet
124	Petroleum Company (A)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	1028.08	520	2496.00			Gigabit Ethernet
125	Compagnie Generale de Geophysique (CGG)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	Malaysia	2003	1016.54	512	2457.60			Gigabit Ethernet
126	Lockheed Martin	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	1016.54	512	2457.60			Gigabit Ethernet
127	Semiconductor Company (C)	IBM	xSeries Xeon 2.8 GHz, Gig-Ethernet	Industry	United States	2003	1013.65	510	2856.00			Gigabit Ethernet
128	Seoul National University	Self-made	Pegasus P4 Xeon Cluster 2.2/2.4/2.8 GHz - Giganet	Academic	Korea, South	2002	1011.00	400	1843.00	257912		Giganet
129	Argonne National Laboratory	Linux Networx	LCRC Xeon 2.4 GHz - Myrinet	Research	United States	2002	1007.00	361	1732.80	208000	35000	Myrinet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
130	Japan Atomic Energy Research Institute	Hewlett-Packard	AlphaServer SC40, 833 MHz	Research	Japan	2002	1007.00	812	1352.80	252700	39954	Quadrics
131	Commissariat a l'Energie Atomique (CEA)	Hewlett-Packard	AlphaServer SC45, 1.25 GHz	Research	France	2003	1004.00	512	1280.00	159700	34560	Quadrics
132	Sandia National Laboratories	Self-made	CPlant/Ross Cluster	Research	United States	2002	996.90	1800	1782.50	310000	56000	Myrinet
133	NEC Fuchu Plant	NEC	SX-6/128M16	Vendor	Japan	2002	982.00	128	1024.00	204800	12800	Crossbar
134	Semiconductor Company (C)	IBM	BladeCenter Cluster Xeon 2.4 GHz, Gig-Ethernet	Industry	United States	2003	981.92	488	2342.40			Gigabit Ethernet
135	National Center for High Performance Computing	Self-made	Pentium4 Xeon, 2.8 GHz, Gig Ethernet	Academic	Taiwan	2003	973.00	300	1680.00	188000	86400	Gigabit Ethernet
136	University of Queensland	SGI	SGI Altix 1.3 GHz	Academic	Australia	2003	936.84	208	1081.60			NUMalink
137	UCSD/San Diego Supercomputer Center	IBM	SP Power3 375 MHz 8 way	Academic	United States	2000	929.00	1152	1728.00	220000	62000	SP Switch
138	United Kingdom Meteorological Office	NEC	SX-6/120M15	Research	United Kingdom	2003	927.60	120	960.00	204000	19440	Crossbar
139	United Kingdom Meteorological Office	NEC	SX-6/120M15	Research	United Kingdom	2003	927.60	120	960.00	204000	19440	Crossbar
140	University of Toronto	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Academic	Canada	2003	924.23	448	2150.40			Gigabit Ethernet
141	Xinjiang Oil	IBM	BladeCenter Cluster Xeon 2.4 GHz, Gig-Ethernet	Industry	China	2003	924.23	448	2150.40			Gigabit Ethernet
142	Pennsylvania State University	Dell	PowerEdge 1750, Pentium4 Xeon 3.06 GHz, GigE	Academic	United States	2003	922.10	256	1566.72			Gigabit Ethernet
143	Sandia National Laboratories	Dell	PowerEdge 1750, Pentium4 Xeon 3.06 GHz, GigE	Research	United States	2003	922.10	256	1566.72			Gigabit Ethernet
144	Compagnie Generale de Geophysique (CGG)	IBM	xSeries Cluster Xeon 2.4 GHz - Myrinet	Industry	United Kingdom	2003	921.49	320	1536.00			Myrinet
145	High Energy Accelerator Research Organization /KEK	Hitachi	SR8000-F1/100	Research	Japan	2000	917.00	100	1200.00	115000	15000	Crossbar
146	Financial Services Company (E)	IBM	BladeCenter Cluster Xeon 2.4 GHz, Gig-Ethernet	Industry	United States	2003	912.69	440	2112.00			Gigabit Ethernet
147	Government	Hewlett-Packard	Cluster Platform 3000 DL380G3, Pentium4 Xeon 2.8 G	Classified	United States	2003	902.00	260	1456.00			Myrinet
148	Bio Informatics Institute	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	Singapore	2003	899.30	256	1433.60			Myrinet
149	Boeing	Hewlett-Packard	Cluster Platform 3000 DL380G3, Pentium4 Xeon 2.8 G	Industry	United States	2003	899.30	256	1433.60			Myrinet
150	Hewlett-Packard	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Vendor	United States	2003	899.30	256	1433.60			Myrinet
151	Universitaet Aachen/RWTH	Sun Microsystems	Fire 15k/6800 Cluster	Academic	Germany	2003	891.40	672	1209.60			Fireplane
152	Maui High-Performance Computing Center (MHPCC)	IBM	SP Power3 375 MHz 16 way	Research	United States	2001	891.00	812	1218.00			SP Switch
153	Maui High-Performance Computing Center (MHPCC)	IBM	pSeries 690 Turbo 1.3GHz	Research	United States	2002	887.30	320	1664.00			SP Switch
154	Pennsylvania State University	Dell	PowerEdge 2650 Cluster P4 Xeon 2.4 GHz - Quadrics	Academic	United States	2003	877.90	256	1228.80	160000		Quadrics
155	University of Tokyo	Hitachi	SR8000/128	Academic	Japan	1999	873.00	128	1024.00	120000	16000	Crossbar
156	Pennsylvania State University	Sun Microsystems	Fire V60 Cluster, 2.8 GHz, Gig Ethernet	Academic	United States	2003	872.27	320	1792.00			Gigabit Ethernet
157	ERDC MSRC	Hewlett-Packard	AlphaServer SC45, 1 GHz	Research	United States	2002	862.20	512	1024.00	205000	26000	Quadrics
158	Hewlett-Packard	Hewlett-Packard	AlphaServer SC45, 1 GHz	Vendor	United States	2002	862.20	512	1024.00	205000	26000	Quadrics
159	Wright-Patterson Air Force Base/DoD ASC	Hewlett-Packard	AlphaServer SC45, 1 GHz	Research	United States	2002	862.20	512	1024.00	205000	26000	Quadrics
160	NASA/Ames Research Center/NAS	SGI	ORIGIN 3000 600 MHz	Research	United States	2002	852.90	1024	1228.80	129024	31744	NUMAflex
161	Los Alamos National Laboratory	Linux Networx	Grendels P4 Cluster 2.4 GHz - Myrinet	Research	United States	2003	840.50	252	1209.60	175760	27768	Myrinet
162	Petroleum Company (B)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	838.93	392	1881.60			Gigabit Ethernet
163	Shenzhen University	Tsinghua University, ShenZhen University	DeepSuper-21C, P4 Xeon 3.06/2.8 GHz, Myrinet	Academic	China	2003	830.10	256	1500.16	117200	32300	Myrinet
164	Australian Partnership for Advanced Computing (APAC)	Hewlett-Packard	AlphaServer SC45, 1 GHz	Academic	Australia	2002	825.50	508	1016.00	170000	26000	Quadrics
165	Universitaet Heidelberg - IWR	Megware	HELICS AMD 1.4 GHz - Myrinet	Academic	Germany	2002	825.00	512	1433.60	171000		Myrinet
166	Mississippi State University	IBM	xSeries Cluster Xeon 3.06 GHz - Gig-E	Academic	United States	2003	822.85	384	2350.08			Gigabit Ethernet
167	IN2P3	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Research	France	2003	822.85	384	1843.20			Gigabit Ethernet
168	PDO	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	Oman	2003	822.85	384	1843.20			Gigabit Ethernet
169	Government	Cray Inc.	T3E900	Classified	United States	1997	815.00	1324	1191.60	134400	26880	Cray Interconnect
170	Sony Data	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United Kingdom	2003	806.78	376	1804.80			Gigabit Ethernet
171	UCSD/San Diego Supercomputer Center	IBM	TeraGrid Cluster Itanium 2 1 GHz - Myrinet	Academic	United States	2003	798.30	252	1008.00	232000	32000	Myrinet
172	Charles Schwab	IBM	SP Power3 375 MHz	Industry	United States	2000	795.00	768	1152.00			SP Switch

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
173	Rutgers University, Department of Physics & Astronomy	Self-made	AMD AthlonMP Cluster 1.65 GHz	Academic	United States	2003	794.00	512	1690.00	223000	37000	Fast Ethernet
174	Institute for Materials Research/Tohoku University	Hitachi	SR8000-G1/64	Academic	Japan	2001	790.70	64	921.60	110000	8504	Crossbar
175	GSIC Center, Tokyo Institute of Technology	Self-made	Presto III Athlon 1.6 GHz	Academic	Japan	2002	788.80	486	1555.20	121500		Myrinet
176	Scalable Systems Group, Dell Computer	Dell	PowerEdge 2650, P4 Xeon 3.06/2.4 GHz, Myrinet	Vendor	United States	2003	787.10	252	1375.92	162400		Myrinet
177	Brigham Young University	IBM	xSeries Cluster Xeon 2.4 GHz - Myrinet	Academic	United States	2003	784.98	256	1228.80			Myrinet
178	South Australian Partnership for Advanced Computing (SAPAC)	IBM	xSeries Cluster Xeon 2.4 GHz - Myrinet	Academic	Australia	2003	784.98	256	1228.80			Myrinet
179	Raytheon	IBM	BladeCenter Xeon 3.06 GHz, Gig-Ethernet	Industry	United States	2003	782.67	364	2227.68			Gigabit Ethernet
180	Ohio Supercomputer Center	Hewlett-Packard	Cluster Platform 6000 zx6000 Itanium2 900 MHz, Myr	Academic	United States	2003	761.90	256	921.60	228000	50000	Myrinet
181	Los Alamos National Laboratory	Self-made	Space Simulator, P4 2.53 GHz - GigEth	Research	United States	2002	757.10	288	1457.00	180000	44000	Gigabit Ethernet
182	EDS/ Adam Opel AG	IBM	pSeries 690 Turbo 1.3GHz	Industry	Germany	2003	755.00	264	1372.80			SP Switch
183	North Carolina Supercomputing Center (NCSC)	IBM	SP Power3 375 MHz	Academic	United States	2000	741.00	720	1080.00			SP Switch
184	IBM	IBM	pSeries 690 Turbo 1.3GHz	Vendor	United States	2002	736.60	256	1331.20	285000	25000	SP Switch
185	IBM	IBM	pSeries 690 Turbo 1.3GHz	Vendor	United States	2002	736.60	256	1331.20	285000	25000	SP Switch
186	National Center for High Performance Computing	IBM	pSeries 690 Turbo 1.3GHz	Academic	Taiwan	2002	736.60	256	1331.20	285000	25000	SP Switch
187	Swiss Scientific Computing Center (CSCS)	IBM	pSeries 690 Turbo 1.3GHz	Research	Switzerland	2002	736.60	256	1331.20	285000	25000	SP Switch
188	LASG/Institute of Atmospheric Physics, CAS	lenovo	DeepComp 1800 - P4 Xeon 2.4 GHz - Myrinet	Academic	China	2002	735.80	256	1228.00	114920	28000	Myrinet
189	Joint Supercomputer Center	Self-made	MVS1000M EV67 667 MHz	Academic	Russia	2002	734.60	768	1024.00	270000	30000	Myrinet
190	Boeing	Hewlett-Packard	Cluster Platform 3000 DL380G3, Pentium4 Xeon 2.8 G	Industry	United States	2003	731.10	192	1075.20			Myrinet
191	University of Tsukuba	Fujitsu	VPP5000/80	Research	Japan	2001	730.00	80	768.00	273600	15360	Crossbar
192	Total Exporation Production	SGL	Altix 3700 900 MHz	Industry	France	2003	727.40	256	921.60			NUMALink
193	Oak Ridge National Laboratory	IBM	SP Power3 375 MHz	Research	United States	2000	723.00	704	1056.00	187000	37500	SP Switch
194	Compagnie Generale de Geophysique (CGG)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	Malaysia	2003	718.38	332	1593.60			Gigabit Ethernet
195	NCSA	IBM	pSeries 690 Turbo 1.3GHz GigEth	Academic	United States	2003	708.00	384	1996.80			Gigabit Ethernet
196	ERDC MSRC	Cray Inc.	Cray X1	Research	United States	2003	706.35	60	768.00	168960	18432	Crossbar
197	Government	Cray Inc.	Cray X1	Classified	United States	2003	706.35	60	768.00	168960	18432	Crossbar
198	Texas Advanced Computing Center/Univ. of Texas	IBM	pSeries p690/p655 1.3GHz	Academic	United States	2002	704.80	224	1164.80			SP Switch
199	Vanderbilt University	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Academic	United States	2003	702.30	324	1555.20			Gigabit Ethernet
200	Media & Entertainment (C)	IBM	pSeries 690 Turbo 1.3 GHz GigEth	Industry	United States	2003	700.64	376	1955.20			Gigabit Ethernet
201	UCSD/Cal-IT^2/SDSC	Sun Microsystems	Rocks V60x Cluster 2.8 GHz, Gig Ethernet	Research	United States	2003	699.00	256	1433.60	114400	10000	Gigabit Ethernet
202	Cambridge University - COSMOS	SGL	SGL Altix 1.3 GHz	Academic	United Kingdom	2003	697.48	152	790.40			NUMALink
203	Japan Meteorological Agency	Hitachi	SR8000-E1/80	Research	Japan	2000	691.30	80	768.00	120000	9408	Crossbar
204	Los Alamos National Laboratory/ACL	SGL	ORIGIN 2000 250 MHz	Research	United States	1999	690.90	2048	1024.00	229248	80640	Crossbar
205	ERDC MSRC	Hewlett-Packard	AlphaServer SC40, 833 MHz	Research	United States	2002	690.90	512	853.00	185000	40000	Quadrics
206	American Museum of Natural History	Linux Labs	Demeter - P4 Xeon 2.6 GHz - Myrinet	Research	United States	2003	680.30	240	1248.00	163750	25400	Myrinet
207	Colsa	IBM	pSeries 690 Turbo 1.3GHz	Industry	United States	2002	680.00	240	1248.00			SP Switch
208	US Department of the Treasury	IBM	pSeries 690 Turbo 1.3GHz	Government	United States	2002	680.00	240	1248.00			SP Switch
209	Fermi National Accelerator Laboratory	Self-made	P4 Xeon Cluster 2.4 GHz - Myrinet	Research	United States	2003	671.30	256	1228.80	100000	20000	Myrinet
210	CSAR at the University of Manchester	Cray Inc.	T3E1200	Academic	United Kingdom	2000	671.00	812	974.40			Cray Interconnect
211	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Gig Ethernet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Gigabit Ethernet
212	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Gig Ethernet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Gigabit Ethernet
213	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Myrinet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Myrinet
214	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Myrinet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Myrinet
215	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Gig Ethernet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Gigabit Ethernet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
216	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Myrinet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Myrinet
217	Petroleum Company (G)	Sun Microsystems	Fire V60 Cluster, 3.06 GHz, Myrinet	Industry	Saudia Arabia	2003	656.70	256	1566.72			Myrinet
218	Sun	Sun Microsystems	Fire V60 Cluster, Myrinet	Vendor	United States	2003	656.70	256	1433.60			Myrinet
219	University of Delaware	Sun Microsystems	Fire V60 Cluster, Myrinet	Academic	United States	2003	656.70	256	1433.60			Myrinet
220	University of Queensland	Sun Microsystems	Fire V60 Cluster, Gig Ethernet	Academic	Australia	2003	656.70	256	1433.60			Gigabit Ethernet
221	Fraunhofer Institut, Ernst-Mach Institute	IBM	xSeries Cluster Xeon 2.0 GHz - Myrinet	Research	Germany	2003	654.70	256	1024.00	159000		Myrinet
222	CBRC - Tsukuba Advanced Computing Center - TACC/AIST	NEC	Magi Cluster PIII 933 MHz	Research	Japan	2001	654.00	1040	970.00	217600	29000	Myrinet
223	Pacific Northwest National Laboratory	SGI	SGI Altix 1.5 GHz	Research	United States	2003	651.70	128	768.00	160000		NUMALink
224	Silicon Graphics	SGI	SGI Altix 1.5 GHz	Vendor	United States	2003	651.70	128	768.00	160000		NUMALink
225	Boeing - Rocketdyne Power and Propulsion	Dell	PowerEdge 2650 Cluster P4 Xeon 2.4 GHz - GigE	Industry	United States	2003	650.00	264	1267.20			Gigabit Ethernet
226	BMW AG	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HPlex	Industry	Germany	2003	642.90	128	768.00			Myrinet
227	Centro de Supercomputaci3n de Galicia	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HPlex	Academic	Spain	2003	642.90	128	768.00			Myrinet
228	Hewlett-Packard	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HPlex	Vendor	United States	2003	642.90	128	768.00			Myrinet
229	National Center for High Performance Computing	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HPlex	Academic	Taiwan	2003	642.90	128	768.00			Myrinet
230	Societa Interbancaria per l'Automazione	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HPlex	Industry	Italy	2003	642.90	128	768.00			Myrinet
231	University of Gdansk, CI Task	Optimus	Itanium2 1.3 GHz, Gig Ethernet	Academic	Poland	2003	641.60	256	1331.20	164000		Gigabit Ethernet
232	Compagnie Generale de Geophysique (CGG)	IBM	BladeCenter Cluster, Xeon 2.8 GHz, Gig-Ethernet	Industry	Indonesia	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
233	Hyundai	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	Korea, South	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
234	IBM - Deep Computing Capacity on Demand Center	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
235	IBM - Deep Computing Capacity on Demand Center	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
236	IBM - Deep Computing Capacity on Demand Center	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
237	IBM - Deep Computing Capacity on Demand Center	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
238	Lockheed Martin	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
239	Petroleum Company (A)	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
240	University of Hong Kong	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Academic	Hong Kong	2003	638.80	256	1433.60	160000	65000	Gigabit Ethernet
241	E*Trade	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	633.99	290	1392.00			Gigabit Ethernet
242	Victorian Partnership for Advanced Computing (VPAC)	IBM	xSeries Cluster Xeon 2.8 GHz - Myrinet	Academic	Australia	2003	629.70	192	1075.00			Myrinet
243	Institute of High Performance Computing (IHPC)	IBM	pSeries 690 Turbo 1.3GHz	Academic	Singapore	2002	623.90	224	1164.80	135000		SP Switch
244	Manufacturer (G)	IBM	pSeries 690 Turbo 1.3GHz	Industry	United States	2002	623.90	224	1164.80	135000		SP Switch
245	IBM	IBM	pSeries 690 1.1GHz	Vendor	United States	2003	623.00	256	1126.40			SP Switch
246	AMD Developer Center	Verari Systems	Opteron 1.8 GHz, Myrinet	Industry	United States	2003	621.20	256	921.60	140000	22500	Myrinet
247	University of Utah	Dell	PowerEdge 2650 Cluster P4 Xeon 2.4 GHz - GigE	Academic	United States	2002	618.30	256	1228.80	166000	51000	Gigabit Ethernet
248	Real World Computing (RWCP)/Tsukuba Research Center	Self-made	SCore IIIe/PIII 933 MHz	Research	Japan	2001	618.30	1024	955.40	146000	23000	Myrinet
249	Meteorological Service of Canada (MSC)	NEC	SX-6/80M10	Research	Canada	2002	616.90	80	640.00			Crossbar
250	St. Jude Children's Research Hospital	IBM	BladeCenter Cluster Xeon 2.4 GHz, Gig-Ethernet	Research	United States	2003	613.90	280	1344.00	200000		Gigabit Ethernet
251	Hewlett-Packard	Hewlett-Packard	Cluster Platform 6000 rx2600 Itanium2 1.5 GHz, Qua	Vendor	United States	2003	609.20	128	768.00	141000		Quadrics
252	University of Oklahoma	Aspen Systems Inc.	P4 Xeon Cluster 2 GHz - Myrinet	Academic	United States	2002	606.90	270	1080.00	160000	35840	Myrinet
253	Galileo International LLC	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	United States	2003	604.06	240	1344.00			Gigabit Ethernet
254	IBM	IBM	pSeries 690 Turbo 1.5 Ghz GigEth	Vendor	United States	2003	596.93	176	1056.00			Gigabit Ethernet
255	University of Calgary	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Academic	Canada	2003	596.28	278	1334.40			Gigabit Ethernet
256	Naval Research Laboratory (NRL)	SGI	SGI Altix 1.3 GHz	Research	United States	2003	594.90	128	665.60	320000		NUMALink
257	Center for Development of Advanced Computing (C-DAC)	C-DAC	PARAM Padma Cluster - pSeries 630 1.1/1.0GHz - PAR	Research	India	2003	594.20	280	1132.80	240000	52500	PARAMNet
258	NCSA	IBM	Netfinity Cluster PIII 1 GHz - Myrinet	Academic	United States	2001	594.00	1024	1024.00			Myrinet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
259	University of Texas, Health Science Center at Houston	Dell	PowerEdge 1750, Pentium4 Xeon 2.8 GHz, GigE	Academic	United States	2003	593.27	180	1008.00			Gigabit Ethernet
260	Consumer Industry	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	Germany	2003	591.07	234	1310.40			Gigabit Ethernet
261	W. Karmann GmbH	IBM	xSeries Xeon 2.8 GHz, GigEthernet	Industry	Germany	2003	591.07	234	1310.40			Gigabit Ethernet
262	Wachovia Corporation	IBM	pSeries 690 Turbo 1.3GHz	Industry	United States	2002	591.00	208	1081.60			SP Switch
263	CNRS/IDRIS	IBM	pSeries 690 Turbo 1.3 GHz, GigEth	Academic	France	2002	590.20	256	1331.20	158000		Gigabit Ethernet
264	Postbank	IBM	pSeries 690 Turbo 1.3 GHz, GigEth	Industry	Germany	2002	590.20	256	1331.20	158000		Gigabit Ethernet
265	Linux Networx	Linux Networx	Pentium4 Xeon 3.06 GHz, Myrinet	Vendor	United States	2003	585.60	144	881.28	119496		Myrinet
266	Commissariat a l'Energie Atomique (CEA)	Hewlett-Packard	AlphaServer SC45, 1.25 GHz	Research	France	2003	581.60	288	720.00	159400	23552	Quadrics
267	Sprint PCS	IBM	SP Power3 375 MHz 16 way	Industry	United States	2002	579.00	528	792.00			SP Switch
268	Hewlett Packard	Hewlett-Packard	Cluster Platform 6000 rx2600 Itanium2 1.5 GHz, Myr	Vendor	Germany	2003	579.00	128	768.00			Myrinet
269	Financial Services (C)	IBM	pSeries 690 Turbo 1.3 GHz GigEth	Industry	United States	2003	577.10	248	1289.60			Gigabit Ethernet
270	University of Tokyo/Institute for Solid State Physics	Hitachi	SR8000-F1/60	Academic	Japan	2000	577.00	60	720.00	89000	10000	Crossbar
271	Naval Research Laboratory (NRL)	Appro International	1200X P4 Xeon 2.2 GHz - Myrinet	Research	United States	2002	575.00	256	1126.40	112500	22500	Myrinet
272	PIK	IBM	pSeries 655 1.1GHz	Research	Germany	2003	574.90	240	1056.00	150000		SP Switch
273	Telecom Italia	IBM	pSeries 690 Turbo 1.3GHz	Industry	Italy	2002	574.00	200	1040.00			SP Switch
274	Government	Hewlett-Packard	AlphaServer SC45, 1.25 GHz	Classified	United States	2003	572.70	276	690.00			Quadrics
275	University of Zurich - Institute for Theoretical Physics	Self-made	zBox, AMD AthlonMP 1.8 GHz - SCI 2D	Academic	Switzerland	2003	570.10	288	1036.80	117500	23000	SCI
276	IBM Thomas J. Watson Research Center	IBM	SP Power3 375 MHz 16 way	Research	United States	2002	570.00	520	780.00			SP Switch
277	Japan Atomic Energy Research Institute	Fujitsu	VPP5000/64	Research	Japan	2001	563.00	64	614.40	235776	12288	Crossbar
278	Kyushu University	Fujitsu	VPP5000/64	Academic	Japan	2000	563.00	64	614.40	235776	12288	Crossbar
279	Meteo-France	Fujitsu	VPP5000/64	Research	France	2003	563.00	64	614.40	235776	12288	Crossbar
280	Petroleum Company (G)	IBM	SP Power3 375 MHz 16 way	Industry	Saudia Arabia	2001	561.00	512	768.00			SP Switch
281	US Army Research Laboratory (ARL)	IBM	SP Power3 375 MHz 16 way	Research	United States	2000	561.00	512	768.00			SP Switch
282	ID-IMAG / INRIA Rhone-Alpes	Hewlett-Packard	Cluster Platform 6000 rx2600 Itanium2 900 MHz Clus	Research	France	2003	561.00	208	748.80			Myrinet
283	Deutsche Telekom AG	IBM	SP Power3 375 MHz	Industry	Germany	2000	553.00	528	792.00			SP Switch
284	Wright-Patterson Air Force Base/DoD ASC	IBM	SP Power3 375 MHz	Research	United States	2000	553.00	528	792.00			SP Switch
285	ERDC MSRC	SGI	ORIGIN 3000 700 MHz	Research	United States	2003	553.00	512	716.80	230000		NUMAflex
286	ERDC MSRC	SGI	ORIGIN 3000 700 MHz	Research	United States	2003	553.00	512	716.80	230000		NUMAflex
287	Government	SGI	ORIGIN 3000 700 MHz	Classified	United States	2003	553.00	512	716.80	230000		NUMAflex
288	Government	SGI	ORIGIN 3000 700 MHz	Classified	United States	2003	553.00	512	716.80	230000		NUMAflex
289	Wright-Patterson Air Force Base/DoD ASC	SGI	ORIGIN 3000 700 MHz	Research	United States	2003	553.00	512	716.80	230000		NUMAflex
290	Wright-Patterson Air Force Base/DoD ASC	SGI	ORIGIN 3000 700 MHz	Research	United States	2003	553.00	512	716.80	230000		NUMAflex
291	Wright-Patterson Air Force Base/DoD ASC	SGI	ORIGIN 3000 700 MHz	Research	United States	2003	553.00	512	716.80	230000		NUMAflex
292	United Kingdom Meteorological Office	Cray Inc.	T3E900	Research	United Kingdom	1997	552.00	876	788.40			Cray Interconnect
293	University of Michigan, Center for Advanced Computing	Atipa Technology	AMD AthlonMP Cluster 1.667 GHz - Myrinet	Academic	United States	2003	550.00	256	853.50	160000	30000	SCI
294	Financial Services (D)	IBM	pSeries 690 Turbo 1.7 GHz GigEth	Industry	United States	2003	549.00	144	979.20			Gigabit Ethernet
295	State Farm	IBM	SP Power3 375 MHz	Industry	United States	2001	546.00	520	780.00			SP Switch
296	Wright-Patterson Air Force Base/DoD ASC	Hewlett-Packard	AlphaServer SC45, 1 GHz	Research	United States	2002	540.00	324	648.00	154000	20000	Quadrics
297	Government	Hewlett-Packard	AlphaServer SC45, 1.25 GHz	Classified	Germany	2003	538.40	256	640.00	160000	22000	Quadrics
298	Los Alamos National Laboratory	Hewlett-Packard	ASCI Q - AlphaServer SC45, 1.25 GHz	Research	United States	2002	538.40	256	640.00	160000	22000	Quadrics
299	Pharmaceutical Company	IBM	SP Power3 375 MHz	Industry	Germany	2001	536.00	510	765.00			SP Switch
300	Indiana University	IBM	SP Power3 375 MHz	Academic	United States	2001	534.00	508	762.00			SP Switch
301	Amdocs	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	530.50	256	896.00			Myrinet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
302	Amdocs	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	530.50	256	896.00			Myrinet
303	Cingular Wireless	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	530.50	256	896.00			Myrinet
304	IT Telecom S.P.A.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	530.50	256	896.00			Myrinet
305	OverWrite	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2002	530.50	256	896.00			Myrinet
306	OverWrite	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	530.50	256	896.00			Myrinet
307	POSDATA	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	530.50	256	896.00			Myrinet
308	T-Systems	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Spain	2003	530.50	256	896.00			Myrinet
309	Triumph Technology	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Taiwan	2003	530.50	256	896.00			Myrinet
310	Vodafone	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Spain	2003	530.50	256	896.00			Myrinet
311	Netsiel S.P.A.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	529.60	256	896.00			Myrinet
312	SBC Service Inc	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	529.60	256	896.00			Myrinet
313	Samsung SDS	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	529.60	256	896.00			Myrinet
314	Sanpaolo Leasint SpA	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	529.60	256	896.00			Myrinet
315	University of Nebraska	Atipa Technology	Prairiefire AMD 1.8 GHz - Myrinet	Academic	United States	2003	528.90	256	920.60	165000	32000	Myrinet
316	ABN AMRO	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Netherlands	2003	526.20	256	896.00			Myrinet
317	United Kingdom Meteorological Office	Cray Inc.	T3E1200	Research	United Kingdom	1999	526.00	636	763.20			Cray Interconnect
318	Grid Technology Research Center, AIST	Self-made	Gfarm Cluster I - Xeon 2.8 GHz - GigE	Research	Japan	2003	520.70	180	1008.00	102960		Gigabit Ethernet
319	VW (Volkswagen AG)	NEC	Express5800 120RC-1, P4 2.8GHz Cluster - GigE	Industry	Germany	2003	519.80	256	1433.60	167000	50000	Gigabit Ethernet
320	Correios Telegrafos	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Brazil	2003	517.00	256	896.00			Myrinet
321	Correios Telegrafos	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Brazil	2003	517.00	256	896.00			Myrinet
322	DeTeCSM	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	517.00	256	896.00			Myrinet
323	EDS	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	517.00	256	896.00			Myrinet
324	Forsythe & Mearthur	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	517.00	256	896.00			Myrinet
325	Hitachi	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Japan	2003	517.00	256	896.00			Myrinet
326	Hitachi IPD Jigyobu (SP-OEM)	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Japan	2003	517.00	256	896.00			Myrinet
327	Lockheed Martin	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	517.00	256	896.00			Myrinet
328	SAT/ISOSA	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Mexico	2003	517.00	256	896.00			Myrinet
329	T-Systems	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	517.00	256	896.00			Myrinet
330	State Farm	IBM	SP Power3 375 MHz	Industry	United States	2001	512.00	488	732.00			SP Switch
331	Agricultural Research	Hewlett-Packard	Blade Cluster BL-20P, Pentium4 Xeon 2.8 GHz	Industry	New Zealand	2003	511.00	128	716.80	109000	20000	Gigabit Ethernet
332	BMW AG	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	Germany	2003	511.00	128	716.80	109000	20000	Myrinet
333	Ministry of Agriculture	Hewlett-Packard	Cluster Platform 3000 DL380G3, Pentium4 Xeon 2.8 G	Government	Japan	2003	511.00	128	716.80	109000	20000	Myrinet
334	Norsk Hydro	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	Norway	2003	511.00	128	716.80	109000	20000	Myrinet
335	PETROBRAS	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	Brazil	2003	511.00	128	716.80	109000	20000	Myrinet
336	Statoil	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	Norway	2003	511.00	128	716.80	109000	20000	Myrinet
337	The University of Nottingham	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Academic	United Kingdom	2003	511.00	128	716.80	109000	20000	Myrinet
338	Williams Racing	Hewlett-Packard	Cluster Platform DL360G3, Pentium4 Xeon 2.8 GHz, M	Industry	United Kingdom	2003	511.00	128	716.80	109000	20000	Myrinet
339	IBM - Rochester	IBM	BladeCenter Cluster Xeon 2.8 GHz, Gig-Ethernet	Vendor	United States	2003	508.86	196	1097.60			Gigabit Ethernet
340	Hewlett-Packard	Hewlett-Packard	AlphaServer SC ES40/EV67	Vendor	United States	2000	507.60	512	682.66	200000	30000	Quadrics
341	Lawrence Livermore National Laboratory	Hewlett-Packard	AlphaServer SC ES40/EV67	Research	United States	2000	507.60	512	682.66	200000	30000	Quadrics
342	Universitaet Wien	init.at	P4 Cluster 2.53 GHz - GigE	Academic	Austria	2003	504.30	192	971.00	151800	40000	Gigabit Ethernet
343	Danish Meteorological Institute	NEC	SX-6/64M8	Research	Denmark	2003	495.20	64	512.00	122880	6656	Crossbar
344	National Aerospace Laboratory of Japan	NEC	SX-6/64M8	Research	Japan	2002	495.20	64	512.00	122880	6656	Crossbar

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
345	National Institute for Environmental Studies	NEC	SX-6/64M8	Research	Japan	2002	495.20	64	512.00	122880	6656	Crossbar
346	Manufacturing Company (F)	Hewlett-Packard	Integrity Superdome, 1.5 GHz, HPLex	Industry	Italy	2003	495.00	96	576.00			Myrinet
347	Centre Informatique National (CINES)	IBM	SP Power3 375 MHz	Academic	France	2001	494.00	472	708.00			SP Switch
348	Citicorp	IBM	pSeries 690 Turbo 1.3GHz GigEth	Industry	United States	2002	493.00	200	1040.00			Gigabit Ethernet
349	Research Center for Explosion Safety, AIST	Self-made	Bakoo Cluster - PC-KOUBOU SUPER AMPHIS2800X/Xeon 2	Research	Japan	2003	492.90	128	716.80	151360		Myrinet
350	Nagoya University	Fujitsu	VPP5000/56	Academic	Japan	1999	492.00	56	537.60	228480	12768	Crossbar
351	Lawrence Livermore National Laboratory	IBM	SP Power3 375 MHz 16 way	Research	United States	2001	491.00	448	672.00			SP Switch
352	KTH - Royal Institute of Technology	Hewlett-Packard	Cluster Platform 6000 rx2600 Itanium2 900 MHz Clus	Academic	Sweden	2003	489.00	180	648.00			Myrinet
353	Rice University	Hewlett-Packard	Cluster Platform 6000 zx6000 Itanium2 900 MHz, Myr	Academic	United States	2003	487.20	174	626.40			Myrinet
354	Kyoto University	Fujitsu	VPP800/63	Academic	Japan	1999	482.00	63	504.00	234360	12852	Crossbar
355	Umea University / HPC2N	Self-made	AMD 1.66 GHz - SCI 3D-torus	Academic	Sweden	2002	481.00	240	800.00	116100	24570	SCI
356	CIE Gegetel SI	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	France	2003	479.50	224	784.00			Myrinet
357	Centrica Plc	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2002	479.50	224	784.00			Myrinet
358	Youngwoo	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	479.50	224	784.00			Myrinet
359	Universitaet Stuttgart, ITB	Self-made	BioCORTEX AMD 1.533 GHz - Myrinet	Academic	Germany	2003	478.40	256	784.90	120000	24800	Myrinet
360	Hewlett-Packard	Hewlett-Packard	SuperDome 750 MHz/HyperFabric	Vendor	United States	2002	470.90	256	768.00	340092	90072	Myrinet
361	Instituto Nacional de Meteorologia	Cray Inc.	Cray X1	Research	Spain	2003	468.38	40	512.00			Crossbar
362	Lawrence Livermore National Laboratory	IBM	ASCI Blue-Pacific CTR, IBM SP 604e	Research	United States	1998	468.20	1344	892.40	205000	65000	SP Switch
363	Morse Computer	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	468.10	224	784.00			Myrinet
364	Cambridge University	Sun Microsystems	Fire 15K 1.05 GHz	Academic	United Kingdom	2002	468.10	300	630.00	230400	38400	Fireplane
365	Cambridge University	Sun Microsystems	Fire 15K 1.05 GHz	Academic	United Kingdom	2002	468.10	300	630.00	230400	38400	Fireplane
366	Cambridge University	Sun Microsystems	Fire 15K 1.05 GHz	Academic	United Kingdom	2002	468.10	300	630.00	230400	38400	Fireplane
367	IKON	IBM	pSeries 690 Turbo 1.3GHz	Industry	United States	2002	468.00	160	832.00			SP Switch
368	Government	SGI	ORIGIN 3000 600 MHz	Classified	United States	2002	466.00	512	614.40	111104	19840	NUMAflex
369	Government	SGI	ORIGIN 3000 600 MHz	Classified	United States	2002	466.00	512	614.40	111104	19840	NUMAflex
370	Government	SGI	ORIGIN 3000 600 MHz	Classified	United States	2002	466.00	512	614.40	111104	19840	NUMAflex
371	Government	SGI	ORIGIN 3000 600 MHz	Classified	United States	2002	466.00	512	614.40	111104	19840	NUMAflex
372	NOAA/Geophysical Fluid Dynamics Laboratory (GFDL)	SGI	ORIGIN 3000 600 MHz	Research	United States	2003	466.00	512	614.40	111104	19840	NUMAflex
373	NOAA/Geophysical Fluid Dynamics Laboratory (GFDL)	SGI	ORIGIN 3000 600 MHz	Research	United States	2003	466.00	512	614.40	111104	19840	NUMAflex
374	NOAA/Geophysical Fluid Dynamics Laboratory (GFDL)	SGI	ORIGIN 3000 600 MHz	Research	United States	2001	466.00	512	614.40	111104	19840	NUMAflex
375	NOAA/Geophysical Fluid Dynamics Laboratory (GFDL)	SGI	ORIGIN 3000 600 MHz	Research	United States	2003	466.00	512	614.40	111104	19840	NUMAflex
376	NOAA/Geophysical Fluid Dynamics Laboratory (GFDL)	SGI	ORIGIN 3000 600 MHz	Research	United States	2001	466.00	512	614.40	111104	19840	NUMAflex
377	Norwegian University of Science and Technology	SGI	ORIGIN 3000 600 MHz	Academic	Norway	2002	466.00	512	614.40	111104	19840	NUMAflex
378	Otto Versand	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	463.10	224	784.00			Myrinet
379	Telkom SA	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	South Africa	2003	463.10	224	784.00			Myrinet
380	IBM	IBM	xSeries Cluster Xeon 2.8 GHz - Myrinet	Vendor	United States	2003	450.00	128	716.80			Myrinet
381	BMW AG	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Industry	Germany	2002	449.40	256	768.00	340092	110052	Myrinet
382	Centrica Plc	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Industry	United Kingdom	2002	449.40	256	768.00	340092	110052	Myrinet
383	Hewlett-Packard	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Vendor	United States	2002	449.40	256	768.00	340092	110052	Myrinet
384	Wachovia Corporation	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Industry	United States	2003	449.40	256	768.00	340092	110052	Myrinet
385	Tsukuba Advanced Computing Center - TACC/AIST	Hitachi	SR8000/64	Research	Japan	1999	449.00	64	512.00	92000	9160	Crossbar
386	Washington University	IBM	BladeCenter Cluster Xeon 2.8 GHz, Gig-Ethernet	Academic	United States	2003	448.19	168	940.80			Gigabit Ethernet
387	Washington University, Genome Sequencing Center	IBM	BladeCenter Cluster Xeon 2.8 GHz, Gig-Ethernet	Academic	United States	2003	448.19	168	940.80			Gigabit Ethernet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
388	Forschungszentrum Juelich (FZJ)	Cray Inc.	T3E1200	Research	Germany	1999	447.00	540	648.00	181440	17280	Cray Interconnect
389	Government	Cray Inc.	T3E1200	Classified	United States	2001	447.00	540	648.00	181440	17280	Cray Interconnect
390	Government	Cray Inc.	T3E1200	Classified	United States	1998	447.00	540	648.00	181440	17280	Cray Interconnect
391	Government	Cray Inc.	T3E1200	Classified	United States	1999	447.00	540	648.00	181440	17280	Cray Interconnect
392	Financial Institution	IBM	SP Power3 375 MHz	Industry	Hong Kong	2000	441.00	424	636.00			SP Switch
393	University of North Carolina	IBM	xSeries Cluster Xeon 2.8/2.4 GHz - Gig-Ethernet	Academic	United States	2003	439.30	224	1209.60	180000	70000	Gigabit Ethernet
394	SberBank	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Industry	Russia	2003	438.60	256	768.00			Myrinet
395	Petroleum Company (A)	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	United States	2003	437.73	260	1248.00			Gigabit Ethernet
396	IBM	IBM	pSeries 655 Turbo 1.5 Ghz GigEth	Vendor	United States	2003	434.13	128	768.00			Gigabit Ethernet
397	Singapore Airlines Limited	IBM	pSeries 690 Turbo 1.5 Ghz GigEth	Industry	Singapore	2003	434.13	128	768.00			Gigabit Ethernet
398	Belgacom	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Industry	Belgium	2003	432.60	256	768.00			Myrinet
399	Government	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Classified	United Kingdom	2002	432.60	256	768.00			Myrinet
400	Government	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Classified	United Kingdom	2002	432.60	256	768.00			Myrinet
401	Sprint PCS	Hewlett-Packard	SuperDome 750 MHz/HyperPlex	Industry	United States	2002	432.60	256	768.00			Myrinet
402	Government	IBM	pSeries 690 Turbo 1.3GHz GigEth	Classified	United States	2002	430.00	176	915.20			Gigabit Ethernet
403	Safelite Glass	IBM	pSeries 690 Turbo 1.3GHz GigEth	Industry	United States	2003	430.00	176	915.20			Gigabit Ethernet
404	US Defense	IBM	pSeries 690 Turbo 1.3GHz GigEth	Classified	United States	2003	430.00	176	915.20			Gigabit Ethernet
405	United Institute of Informatics Problems	Self-made	Pentium4 Xeon 2.8 GHz, SCI 3D	Academic	Belarus	2003	423.60	128	716.80	123000	25000	SCI
406	Center for Theoretical Biological Physics/UCSD	Dell	PowerEdge 2650, 2.8 GHz, Gig Ethernet, Rocks	Academic	United States	2003	423.00	160	896.00	91800	30000	Gigabit Ethernet
407	Government	Cray Inc.	Cray X1	Classified	United States	2003	422.10	36	460.80	129024	13056	Crossbar
408	Government	Cray Inc.	Cray X1	Classified	Canada	2003	422.10	36	460.80	129024	13056	Crossbar
409	AG Edwards	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	421.00	192	672.00			Myrinet
410	BMW AG	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	421.00	192	672.00			Myrinet
411	BMW AG	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	421.00	192	672.00			Myrinet
412	BellSouth	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2002	421.00	192	672.00			Myrinet
413	Citibank	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Singapore	2003	421.00	192	672.00			Myrinet
414	Energy Company	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2002	421.00	192	672.00			Myrinet
415	HP International Bank PLC	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Netherlands	2003	421.00	192	672.00			Myrinet
416	Kone	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Belgium	2003	421.00	192	672.00			Myrinet
417	Netsiel S.P.A.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2002	421.00	192	672.00			Myrinet
418	OverWrite	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	421.00	192	672.00			Myrinet
419	Telecom Italia	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2002	421.00	192	672.00			Myrinet
420	Telecom Italia	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	421.00	192	672.00			Myrinet
421	Verizon SCell	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2002	421.00	192	672.00			Myrinet
422	Verizon SCell	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2002	421.00	192	672.00			Myrinet
423	YEJI Information Technology	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	421.00	192	672.00			Myrinet
424	Defense	Sun Microsystems	HPC 4500 400 MHz Cluster	Classified	Sweden	1999	420.44	896	716.80	144000	43200	N/A
425	Service Provider	Sun Microsystems	HPC 4500 400 MHz Cluster	Industry	United States	2000	420.44	896	716.80	144000	43200	N/A
426	Service Provider	Sun Microsystems	HPC 4500 400 MHz Cluster	Industry	United States	2000	420.44	896	716.80	144000	43200	N/A
427	Sun	Sun Microsystems	HPC 4500 400 MHz Cluster	Vendor	United States	2000	420.44	896	716.80	144000	43200	N/A
428	Accenture	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	418.10	192	672.00			Myrinet
429	Amdocs	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	418.10	192	672.00			Myrinet
430	Einstein Tec. Ind.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Taiwan	2003	418.10	192	672.00			Myrinet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
431	Government	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Classified	United States	2003	418.10	192	672.00			Myrinet
432	Government	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Classified	United States	2003	418.10	192	672.00			Myrinet
433	Huapu Information Technology	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	China	2003	418.10	192	672.00			Myrinet
434	Hutchison Telecom	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Hong Kong	2003	418.10	192	672.00			Myrinet
435	Korean Bank	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	418.10	192	672.00			Myrinet
436	Logical Networks	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	418.10	192	672.00			Myrinet
437	SK Global	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	418.10	192	672.00			Myrinet
438	Volvo	IBM	xSeries Cluster Xeon 3.06 GHz - Gig-E	Industry	Sweden	2003	415.72	153	936.36			Gigabit Ethernet
439	E*Trade	IBM	xSeries Cluster Xeon 2.8 GHz - Gig-E	Industry	United States	2003	413.56	152	851.20			Gigabit Ethernet
440	Amdocs	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	412.70	192	672.00			Myrinet
441	Digital China Ltd.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	China	2003	412.70	192	672.00			Myrinet
442	Energy Company	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Netherlands	2003	412.70	192	672.00			Myrinet
443	Hitachi IPD Jigyobu (SP-OEM)	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Japan	2003	412.70	192	672.00			Myrinet
444	Hitachi IPD Jigyobu (SP-OEM)	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Japan	2003	412.70	192	672.00			Myrinet
445	IB Solution	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	France	2003	412.70	192	672.00			Myrinet
446	IT Telecom S.P.A.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	412.70	192	672.00			Myrinet
447	Morse Computer	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	412.70	192	672.00			Myrinet
448	Nike	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	412.70	192	672.00			Myrinet
449	Northrop Grumman	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	412.70	192	672.00			Myrinet
450	OverWrite	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	412.70	192	672.00			Myrinet
451	Telecom Italia Mobile	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	412.70	192	672.00			Myrinet
452	Voicestream Wireless	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2002	412.70	192	672.00			Myrinet
453	Yuan Rong Development	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	China	2003	412.70	192	672.00			Myrinet
454	AT&T Wireless	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
455	Airtel Movil S.A.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Spain	2003	408.20	192	672.00			Myrinet
456	Algol Products	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	408.20	192	672.00			Myrinet
457	Amdocs	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
458	Computer Design & Integra	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
459	EDS	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
460	Eurotel Praha	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Czech Republic	2003	408.20	192	672.00			Myrinet
461	GNT Finland Oy	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Finland	2003	408.20	192	672.00			Myrinet
462	Generalitat	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Spain	2003	408.20	192	672.00			Myrinet
463	Global Value Services S.P.A.	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	408.20	192	672.00			Myrinet
464	Goodyear - Technical Center	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Luxembourg	2003	408.20	192	672.00			Myrinet
465	Government	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Classified	France	2003	408.20	192	672.00			Myrinet
466	Government	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Classified	France	2003	408.20	192	672.00			Myrinet
467	HP	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Vendor	Germany	2003	408.20	192	672.00			Myrinet
468	HP	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Vendor	Netherlands	2003	408.20	192	672.00			Myrinet
469	Infineon	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	408.20	192	672.00			Myrinet
470	Johnson & Johnson	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
471	Lufthansa Infratec GmbH	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	408.20	192	672.00			Myrinet
472	Magirus International	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Germany	2003	408.20	192	672.00			Myrinet
473	Maryville Data Systems	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet

Rank	Site	Manufacturer	Computer	Inst. type	Country	Year	Rmax	Processors	Rpeak	Nmax	Nhalf	Interconnect
474	NACF	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	408.20	192	672.00			Myrinet
475	New Zealand Dairy Board	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	New Zealand	2003	408.20	192	672.00			Myrinet
476	Nokia Oy	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Finland	2003	408.20	192	672.00			Myrinet
477	PT Communications	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Portugal	2003	408.20	192	672.00			Myrinet
478	Qwest	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
479	Samsung CARD	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	408.20	192	672.00			Myrinet
480	Samsung Capital	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	408.20	192	672.00			Myrinet
481	Sonofon A/S	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Denmark	2003	408.20	192	672.00			Myrinet
482	Telecom Italia Mobile	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Italy	2003	408.20	192	672.00			Myrinet
483	Telkom SA	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	South Africa	2003	408.20	192	672.00			Myrinet
484	Verizon	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United States	2003	408.20	192	672.00			Myrinet
485	Vodafone	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Ireland	2003	408.20	192	672.00			Myrinet
486	Vodafone	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	United Kingdom	2003	408.20	192	672.00			Myrinet
487	Zungwon	Hewlett-Packard	SuperDome 875 MHz/HyperPlex	Industry	Korea, South	2003	408.20	192	672.00			Myrinet
488	Gesellschaft fuer wissenschaftliche Datenverarbeitung	Dell	PowerEdge 2650 3.06 GHz, Scali	Academic	Germany	2003	407.00	108	660.96	120000		SCI
489	Centre Informatique National (CINES)	SGI	ORIGIN 3000 500 MHz	Academic	France	2002	405.60	512	512.00	230000		NUMAflex
490	Fleet Numerical Meteorology and Oceanography Center	SGI	ORIGIN 3000 500 MHz	Research	United States	2001	405.60	512	512.00	230000		NUMAflex
491	Government	SGI	ORIGIN 3000 500 MHz	Classified	United States	2002	405.60	512	512.00	230000		NUMAflex
492	Kyoto University, Institute for Chemical Research	SGI	ORIGIN 3000 500 MHz	Academic	Japan	2002	405.60	512	512.00	230000		NUMAflex
493	Los Alamos National Laboratory	SGI	ORIGIN 3000 500 MHz	Research	United States	2002	405.60	512	512.00	230000		NUMAflex
494	Manufacturing Company	SGI	ORIGIN 3000 500 MHz	Industry	United States	2002	405.60	512	512.00	230000		NUMAflex
495	SARA (Stichting Academisch Rekencentrum)	SGI	ORIGIN 3000 500 MHz	Academic	Netherlands	2000	405.60	512	512.00	230000		NUMAflex
496	SARA (Stichting Academisch Rekencentrum)	SGI	ORIGIN 3000 500 MHz	Academic	Netherlands	2000	405.60	512	512.00	230000		NUMAflex
497	McGill University	Self-made	Athlon 1.6 GHz, Myrinet	Academic	Canada	2003	403.60	240	768.00	142000	26000	Myrinet
498	MTU Aero Engines	Dell	PowerEdge 2650 Cluster P4 Xeon 2.4 GHz - Myrinet	Industry	Germany	2003	403.40	128	614.40	89000		Myrinet
499	Shell	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	Malaysia	2003	402.50	256	1228.80	158600		Gigabit Ethernet
500	ShengriLi	IBM	xSeries Cluster Xeon 2.4 GHz - Gig-E	Industry	China	2003	402.50	256	1228.80	158600		Gigabit Ethernet