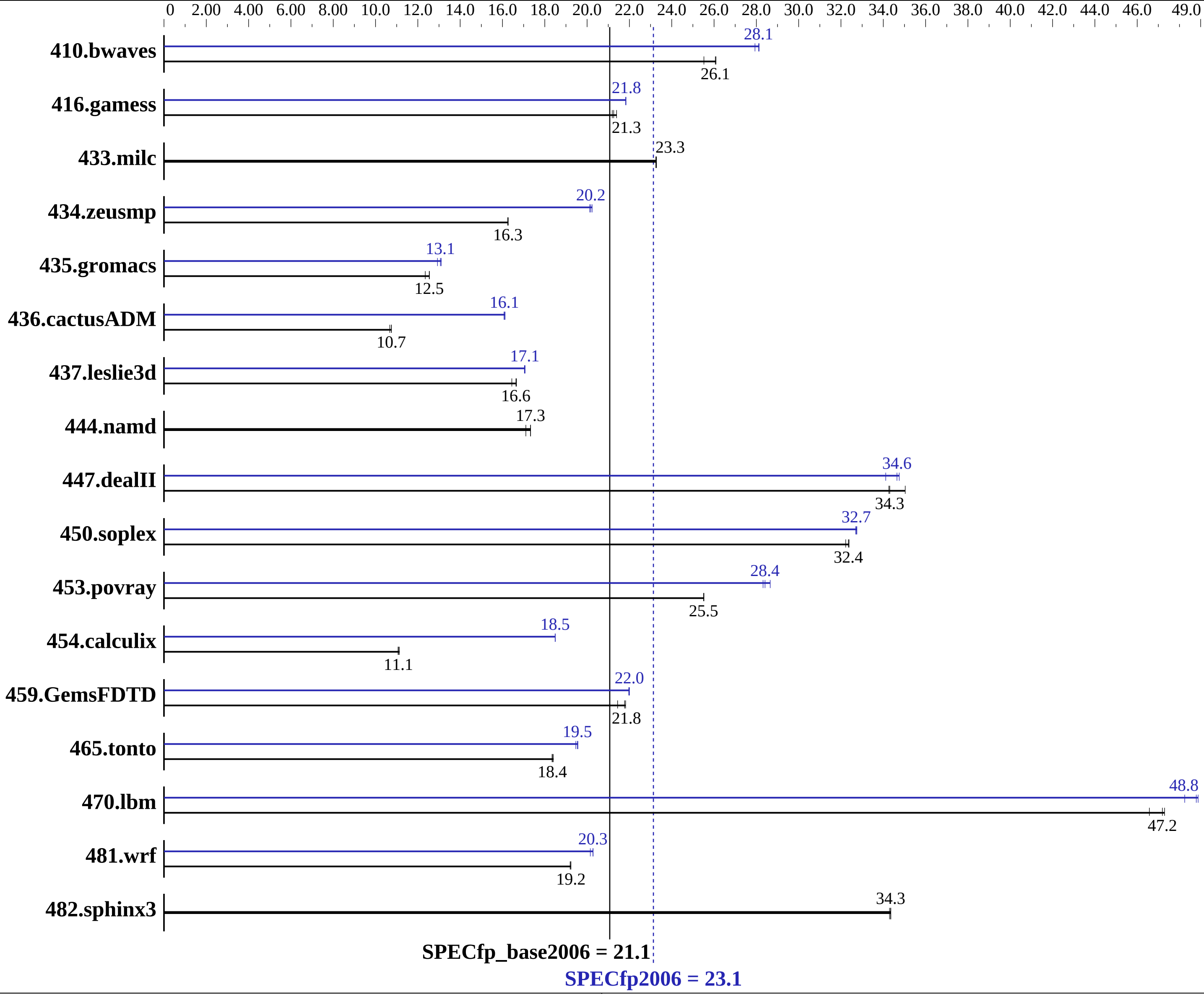
SPEC® CFP2006 Result

Sun Microsystems
Sun Blade X6270 (GCC 4.4.0)

SPECfp®2006 = 23.1

SPECfp_base2006 = 21.1

CPU2006 license:	6	**Test date:**	May-2009
Test sponsor:	Sun Microsystems	**Hardware Availability:**	Apr-2009
Tested by:	Sun Microsystems	**Software Availability:**	Apr-2009



Hardware

CPU Name:	Intel Xeon X5570
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 or 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 11.0 (x86_64) Kernel 2.6.27.19-5-default
Compiler:	GCC 4.4.0
Auto Parallel:	No
File System:	ext3
System State:	Run level 5 (multi-user with display manager)
Base Pointers:	64-bit
Peak Pointers:	64-bit

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB DDR3-1333)
Disk Subsystem: 1 x 146 GB Sun 10,000 RPM SAS
Other Hardware: None

Other Software: gmp-4.3.1 and mpfr-2.4.1
Large pages were obtained with libhugetlbfs-2.3

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	521	26.1	**521**	**26.1**	532	25.5	486	27.9	483	28.1	**484**	**28.1**
416.gamess	**921**	**21.3**	915	21.4	924	21.2	**897**	**21.8**	897	21.8	897	21.8
433.milc	**395**	**23.3**	395	23.3	394	23.3	**395**	**23.3**	395	23.3	394	23.3
434.zeusmp	559	16.3	560	16.2	**560**	**16.3**	450	20.2	452	20.1	**451**	**20.2**
435.gromacs	578	12.4	569	12.5	**569**	**12.5**	**546**	**13.1**	552	12.9	545	13.1
436.cactusADM	1120	10.7	**1112**	**10.7**	1111	10.8	741	16.1	**742**	**16.1**	743	16.1
437.leslie3d	**565**	**16.6**	564	16.7	572	16.4	551	17.1	**551**	**17.1**	552	17.0
444.namd	463	17.3	**463**	**17.3**	469	17.1	463	17.3	**463**	**17.3**	469	17.1
447.dealII	327	35.0	**333**	**34.3**	334	34.3	**330**	**34.6**	329	34.8	335	34.1
450.soplex	259	32.2	258	32.4	**258**	**32.4**	255	32.8	255	32.7	**255**	**32.7**
453.povray	208	25.5	209	25.5	**209**	**25.5**	**187**	**28.4**	186	28.7	188	28.3
454.calculix	746	11.1	742	11.1	**744**	**11.1**	446	18.5	**446**	**18.5**	446	18.5
459.GemsFDTD	486	21.8	495	21.4	**487**	**21.8**	483	22.0	482	22.0	**482**	**22.0**
465.tonto	**536**	**18.4**	535	18.4	536	18.3	503	19.6	506	19.5	**504**	**19.5**
470.lbm	**291**	**47.2**	291	47.3	295	46.6	285	48.2	**282**	**48.8**	281	48.9
481.wrf	581	19.2	582	19.2	**581**	**19.2**	554	20.2	551	20.3	**551**	**20.3**
482.sphinx3	**567**	**34.3**	568	34.3	567	34.4	**567**	**34.3**	568	34.3	567	34.4

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The config file option 'submit' was used, along with 'numactl', to
run each benchmark on a specific core.
```

Operating System Notes

```
Default ulimit settings were used.

2 GB of swap was enabled on local disk.

512 large (2 MB) pages were allocated using:
     sysctl vm.nr_hugepages=512
     HUGETLB_MORECORE=yes
     export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
For more information on tuning paramaters, please
```

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Operating System Notes (Continued)

```
see the "Platform settings" section of the flags file.
```

Platform Notes

```
AMIBIOS Build Date 1/26/09 ID 07.01.36.00
  Default BIOS settings used except:
  Intel VT-d: Disabled.  VT-d, if enabled, supports
  remapping of I/O DMA transfers for virtualization.
```

Base Compiler Invocation

C benchmarks:
`gcc`

C++ benchmarks:
`g++`

Fortran benchmarks:
`gfortran`

Benchmarks using both Fortran and C:
`gcc gfortran`

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
`-O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -Wl,-z common-page-size=2M`

C++ benchmarks:
`-O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -ffast-math -Wl,-z common-page-size=2M`

Fortran benchmarks:
`-O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -Wl,-z common-page-size=2M`

Benchmarks using both Fortran and C:
`-O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -Wl,-z common-page-size=2M`

Base Other Flags

C benchmarks:
`-Wall`

C++ benchmarks:
`-Wall`

Fortran benchmarks:
`-Wall`

Benchmarks using both Fortran and C:
`-Wall`

Peak Compiler Invocation

C benchmarks:
`gcc`

C++ benchmarks:
`g++`

Fortran benchmarks:
`gfortran`

Benchmarks using both Fortran and C:
`gcc gfortran`

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Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: -fprofile-generate(pass 1) -fprofile-use(pass 2) -O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -ffast-math -Wl,-z common-page-size=2M

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: -fprofile-generate(pass 1) -fprofile-use(pass 2) -O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -ffast-math -Wl,-z common-page-size=2M

450.soplex: Same as 447.dealII

453.povray: Same as 447.dealII

Fortran benchmarks:
-fprofile-generate(pass 1) -fprofile-use(pass 2) -O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -ffast-math -Wl,-z common-page-size=2M

Benchmarks using both Fortran and C:
-fprofile-generate(pass 1) -fprofile-use(pass 2) -O3 -m64 -mtune=core2 -msse4.2 -march=core2 -fprefetch-loop-arrays -funroll-all-loops -ffast-math -Wl,-z common-page-size=2M

Peak Other Flags

C benchmarks:
-Wall

C++ benchmarks:
-Wall

Fortran benchmarks:
-Wall

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Peak Other Flags (Continued)

Benchmarks using both Fortran and C:
`-Wall`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/GCC-4.4.0.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/GCC-4.4.0.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 01:19:07 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 23 June 2009.