SPEC® CFP2006 Result

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HITACHI

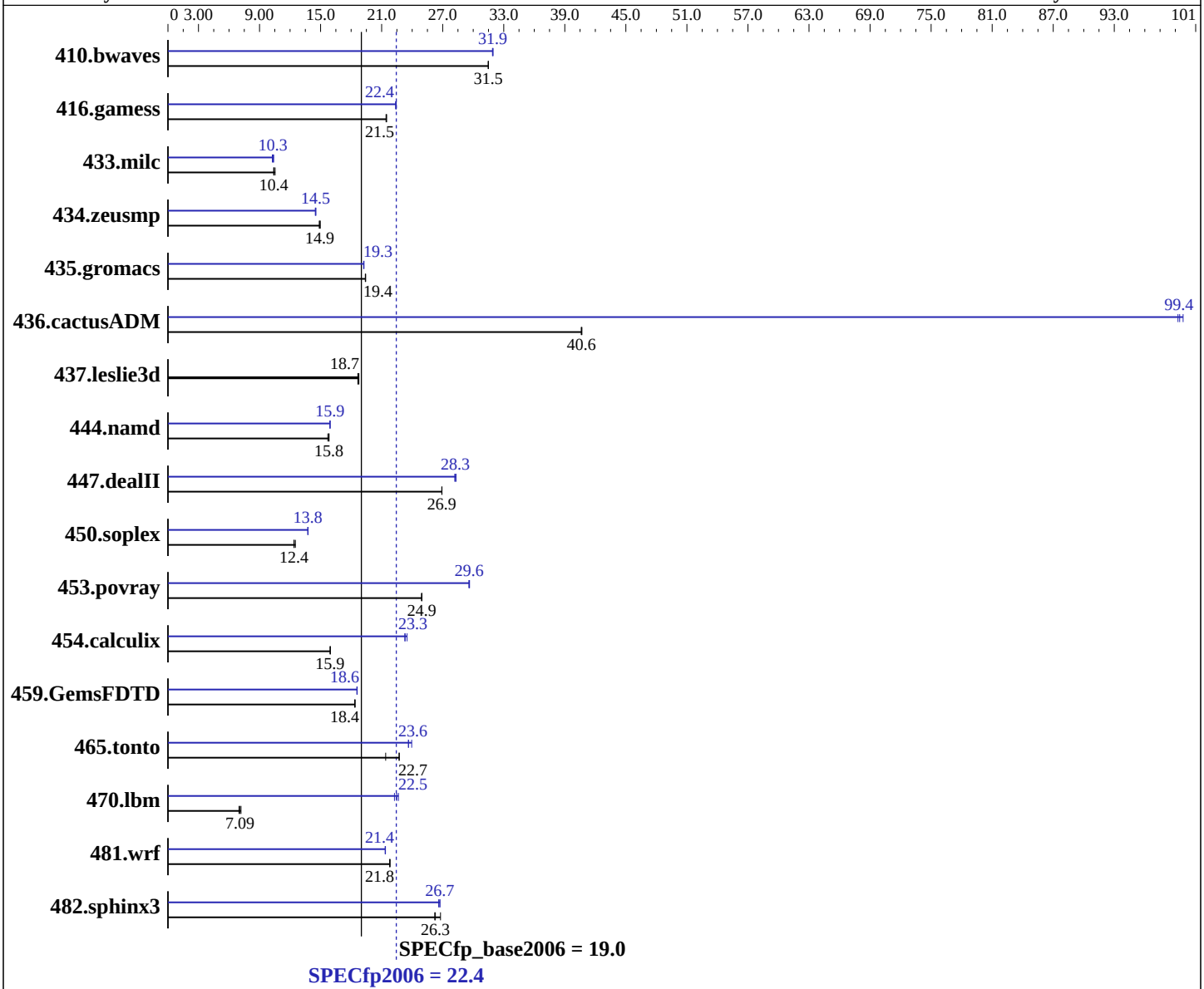
BladeSymphony BS320 (Intel Xeon E5450)

SPECfp®2006 = 22.4

SPECfp_base2006 = 19.0

CPU2006 license: 872
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Feb-2008
Hardware Availability: Nov-2007
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5450
CPU Characteristics:	1333MHz system bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1, 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System:	Red Hat Enterprise Linux Server release 5.1 (Tikanga) Kernel 2.6.18-53.el5 on an x86_64
Compiler:	Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008

Continued on next page

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB(4 x 4 GB PC2-5300F CAS 5-5-5)
Disk Subsystem:	1 x 147 GB 10000 rpm SAS
Other Hardware:	None

Auto Parallel:	Yes
File System:	ext3
System State:	Multi-user run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**432**	**31.5**	432	31.5	432	31.5	426	31.9	425	31.9	**426**	**31.9**
416.gamess	912	21.5	**912**	**21.5**	914	21.4	872	22.4	**873**	**22.4**	875	22.4
433.milc	**881**	**10.4**	872	10.5	883	10.4	884	10.4	**888**	**10.3**	895	10.3
434.zeusmp	608	15.0	612	14.9	**610**	**14.9**	626	14.5	628	14.5	**627**	**14.5**
435.gromacs	368	19.4	**368**	**19.4**	367	19.4	371	19.3	**371**	**19.3**	371	19.2
436.cactusADM	294	40.7	294	40.6	**294**	**40.6**	120	99.8	120	99.3	**120**	**99.4**
437.leslie3d	**502**	**18.7**	501	18.8	504	18.7	**502**	**18.7**	501	18.8	504	18.7
444.namd	507	15.8	**507**	**15.8**	511	15.7	**504**	**15.9**	504	15.9	503	15.9
447.dealII	425	26.9	425	26.9	**425**	**26.9**	**405**	**28.3**	406	28.2	404	28.3
450.soplex	674	12.4	666	12.5	**672**	**12.4**	605	13.8	607	13.7	**606**	**13.8**
453.povray	213	25.0	**213**	**24.9**	213	24.9	**180**	**29.6**	180	29.6	179	29.6
454.calculix	**517**	**15.9**	518	15.9	517	16.0	**354**	**23.3**	351	23.5	354	23.3
459.GemsFDTD	578	18.4	**577**	**18.4**	577	18.4	570	18.6	571	18.6	**571**	**18.6**
465.tonto	433	22.7	**433**	**22.7**	460	21.4	**416**	**23.6**	416	23.6	411	24.0
470.lbm	1968	6.98	**1939**	**7.09**	1914	7.18	**611**	**22.5**	607	22.7	617	22.3
481.wrf	**512**	**21.8**	512	21.8	513	21.8	523	21.4	523	21.3	**523**	**21.4**
482.sphinx3	728	26.8	743	26.2	**742**	**26.3**	733	26.6	729	26.7	**730**	**26.7**

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

General Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
```

Base Compiler Invocation

C benchmarks:

```
icc
```

C++ benchmarks:

```
icpc
```

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Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
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 -nofor_main
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:
-fast -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

Peak Compiler Invocation

C benchmarks (except as noted below):
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

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Peak Compiler Invocation (Continued)

433.milc: icc

C++ benchmarks (except as noted below):
icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Peak 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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -prof_gen(pass 1) -prof_use(pass 2) -fast -fno-alias -auto-ilp32

470.lbm: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -fno-alias -auto-ilp32`

447.dealII: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -opt-malloc-options=3`

453.povray: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-fast -prefetch -parallel`

416.gamess: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -Ob0 -prefetch -parallel`

465.tonto: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll4 -auto`

Benchmarks using both Fortran and C:

435.gromacs: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -prefetch -auto-ilp32`

436.cactusADM: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -parallel -prefetch -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.01.xml`

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