SPEC® CFP2006 Result

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HITACHI

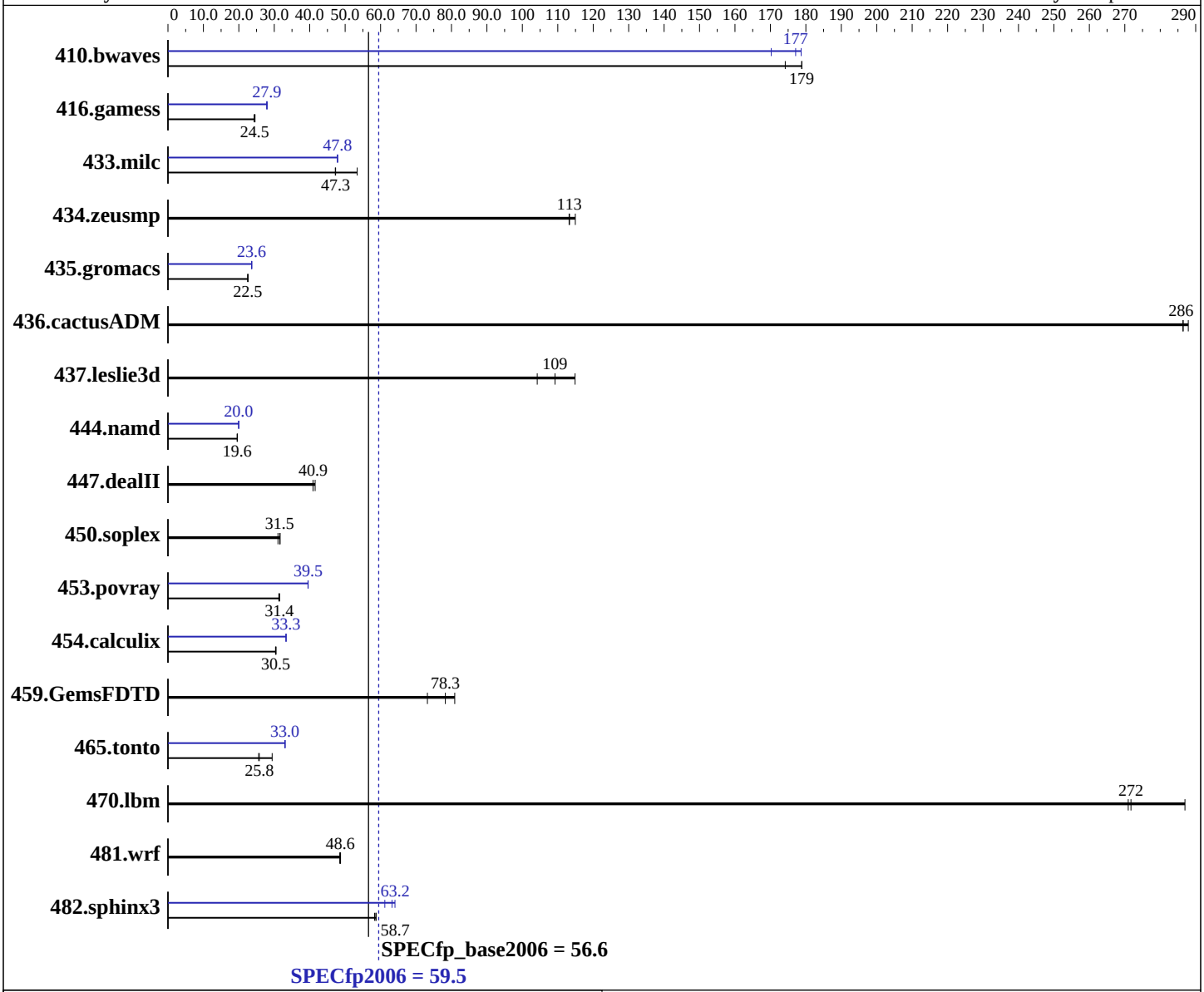
BladeSymphony BS320 (Intel Xeon X5675)

SPECfp®2006 = 59.5

SPECfp_base2006 = 56.6

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Apr-2011
Hardware Availability: Feb-2011
Software Availability: Apr-2011



Hardware

CPU Name:	Intel Xeon X5675
CPU Characteristics:	Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz:	3060
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip
CPU(s) orderable:	1, 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:	Red Hat Enterprise Linux Server release 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86_64
Compiler:	Intel C++ Compiler XE for Linux Version 12.0.3.174 Build 20110309 Intel Fortran Compiler XE for Linux Version 12.0.3.174 Build 20110309
Auto Parallel:	Yes
File System:	ext3

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 1333 MHz)
Disk Subsystem: 2 x 147 GB 10000 rpm SAS RAID1 configuration
Other Hardware: None

System State: Run level 3 (multi-user)
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	78.0	174	76.0	179	**76.0**	**179**	79.8	170	76.1	179	**76.7**	**177**
416.gamess	805	24.3	**799**	**24.5**	797	24.6	**702**	**27.9**	699	28.0	702	27.9
433.milc	**194**	**47.3**	194	47.2	172	53.4	192	47.8	192	47.9	**192**	**47.8**
434.zeusmp	80.4	113	**80.3**	**113**	79.2	115	80.4	113	**80.3**	**113**	79.2	115
435.gromacs	316	22.6	318	22.5	**317**	**22.5**	**302**	**23.6**	303	23.6	302	23.7
436.cactusADM	41.7	286	**41.7**	**286**	41.5	288	41.7	286	**41.7**	**286**	41.5	288
437.leslie3d	81.8	115	**86.1**	**109**	90.2	104	81.8	115	**86.1**	**109**	90.2	104
444.namd	409	19.6	411	19.5	**410**	**19.6**	402	20.0	**402**	**20.0**	402	20.0
447.dealII	**279**	**40.9**	279	40.9	275	41.5	**279**	**40.9**	279	40.9	275	41.5
450.soplex	269	31.0	**264**	**31.5**	263	31.7	269	31.0	**264**	**31.5**	263	31.7
453.povray	**169**	**31.4**	169	31.5	170	31.3	134	39.6	135	39.5	**135**	**39.5**
454.calculix	**271**	**30.5**	272	30.3	271	30.5	248	33.3	248	33.3	**248**	**33.3**
459.GemsFDTD	**136**	**78.3**	131	80.9	145	73.2	**136**	**78.3**	131	80.9	145	73.2
465.tonto	**382**	**25.8**	384	25.6	335	29.4	298	33.1	**298**	**33.0**	298	33.0
470.lbm	50.7	271	47.9	287	**50.6**	**272**	50.7	271	47.9	287	**50.6**	**272**
481.wrf	229	48.7	230	48.5	**230**	**48.6**	229	48.7	230	48.5	**230**	**48.6**
482.sphinx3	**332**	**58.7**	334	58.3	332	58.7	**308**	**63.2**	318	61.2	304	64.1

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
Hugepages was enabled with the following:
'nodev   /mnt/hugepages   hugetlbfs  defaults   0 0' added to /etc/fstab
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS Settings:
Intel HT Technology = Disabled
Data Reuse Optimization = Disabled
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -parallel -static

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/PlatformHitachi.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/PlatformHitachi.xml

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