SPEC® CFP2006 Result

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HITACHI

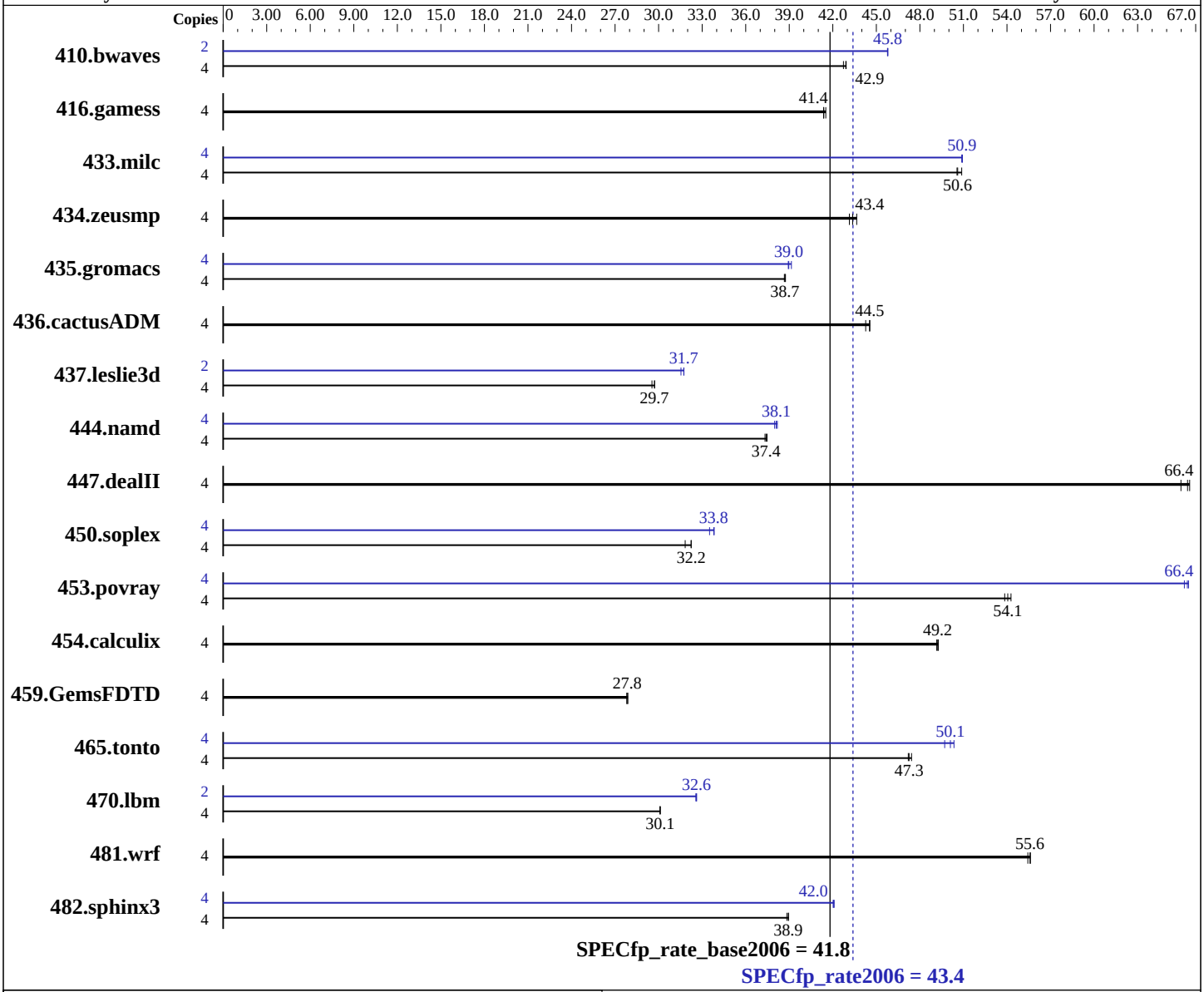
HA8000-bd (Intel Core i7-610E)

SPECfp®_rate2006 = 43.4

SPECfp_rate_base2006 = 41.8

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

Test date: May-2010
Hardware Availability: Jul-2010
Software Availability: Dec-2009



Hardware

CPU Name:	Intel Core i7-610E
CPU Characteristics:	Intel Turbo Boost Technology disabled
CPU MHz:	2533
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
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, Advanced Platform, Kernel 2.6.18-164.el5 on an x86_64
Compiler:	Intel C++ Compiler 11.1 for Linux Build 20091012 Package ID: l_cproc_p_11.1.059 Intel Fortran Compiler 11.1 for Linux Build 20091012 Package ID: l_cprof_p_11.1.059
Auto Parallel:	No
File System:	ext3

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB(2 x 4 GB PC3-8500U, 2 rank, CL7)
Disk Subsystem: 1 x 160 GB 7200 rpm SATA2
Other Hardware: None

System State: Multi-user run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1272	42.7	1266	42.9	**1267**	**42.9**	2	594	45.8	594	45.8	**594**	**45.8**
416.gamess	4	1886	41.5	1893	41.4	**1893**	**41.4**	4	1886	41.5	1893	41.4	**1893**	**41.4**
433.milc	4	726	50.6	**726**	**50.6**	722	50.9	4	721	50.9	722	50.9	**721**	**50.9**
434.zeusmp	4	844	43.1	834	43.6	**839**	**43.4**	4	844	43.1	834	43.6	**839**	**43.4**
435.gromacs	4	739	38.7	737	38.7	**738**	**38.7**	4	730	39.1	**733**	**39.0**	734	38.9
436.cactusADM	4	1073	44.6	1080	44.3	**1073**	**44.5**	4	1073	44.6	1080	44.3	**1073**	**44.5**
437.leslie3d	4	**1265**	**29.7**	1265	29.7	1273	29.5	2	596	31.5	**592**	**31.7**	592	31.7
444.namd	4	856	37.5	859	37.3	**858**	**37.4**	4	840	38.2	**842**	**38.1**	844	38.0
447.dealII	4	687	66.6	693	66.0	**689**	**66.4**	4	687	66.6	693	66.0	**689**	**66.4**
450.soplex	4	1048	31.8	**1035**	**32.2**	1035	32.2	4	996	33.5	986	33.8	**987**	**33.8**
453.povray	4	392	54.3	**394**	**54.1**	395	53.8	4	320	66.5	**320**	**66.4**	321	66.2
454.calculix	4	670	49.3	671	49.2	**670**	**49.2**	4	670	49.3	671	49.2	**670**	**49.2**
459.GemsFDTD	4	1522	27.9	**1525**	**27.8**	1526	27.8	4	1522	27.9	**1525**	**27.8**	1526	27.8
465.tonto	4	830	47.4	834	47.2	**833**	**47.3**	4	792	49.7	782	50.3	**786**	**50.1**
470.lbm	4	1825	30.1	**1826**	**30.1**	1826	30.1	2	844	32.6	**843**	**32.6**	843	32.6
481.wrf	4	806	55.4	**804**	**55.6**	803	55.6	4	806	55.4	**804**	**55.6**	803	55.6
482.sphinx3	4	**2002**	**38.9**	2002	38.9	2008	38.8	4	1855	42.0	1852	42.1	**1854**	**42.0**

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.
'/usr/bin/numactl' used to bind processes to CPUs
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Base Compiler Invocation

C benchmarks:

```
icc -m64
```

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Base Compiler Invocation (Continued)

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

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

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

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static

Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:
`ifort -m64`

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

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`
470.lbm: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

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) `-static`(pass 2) `-prof-use`(pass 2) `-fno-alias -opt-prefetch`

470.lbm: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-opt-malloc-options=3 -ansi-alias -auto-ilp32`

Continued on next page

Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

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

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

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

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-malloc-options=3 -opt-prefetch

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) -static(pass 2) -prof-use(pass 2) -unroll4 -auto -inline-calloc -opt-malloc-options=3

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) -static(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.xml

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