SPEC® CFP2006 Result

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HITACHI

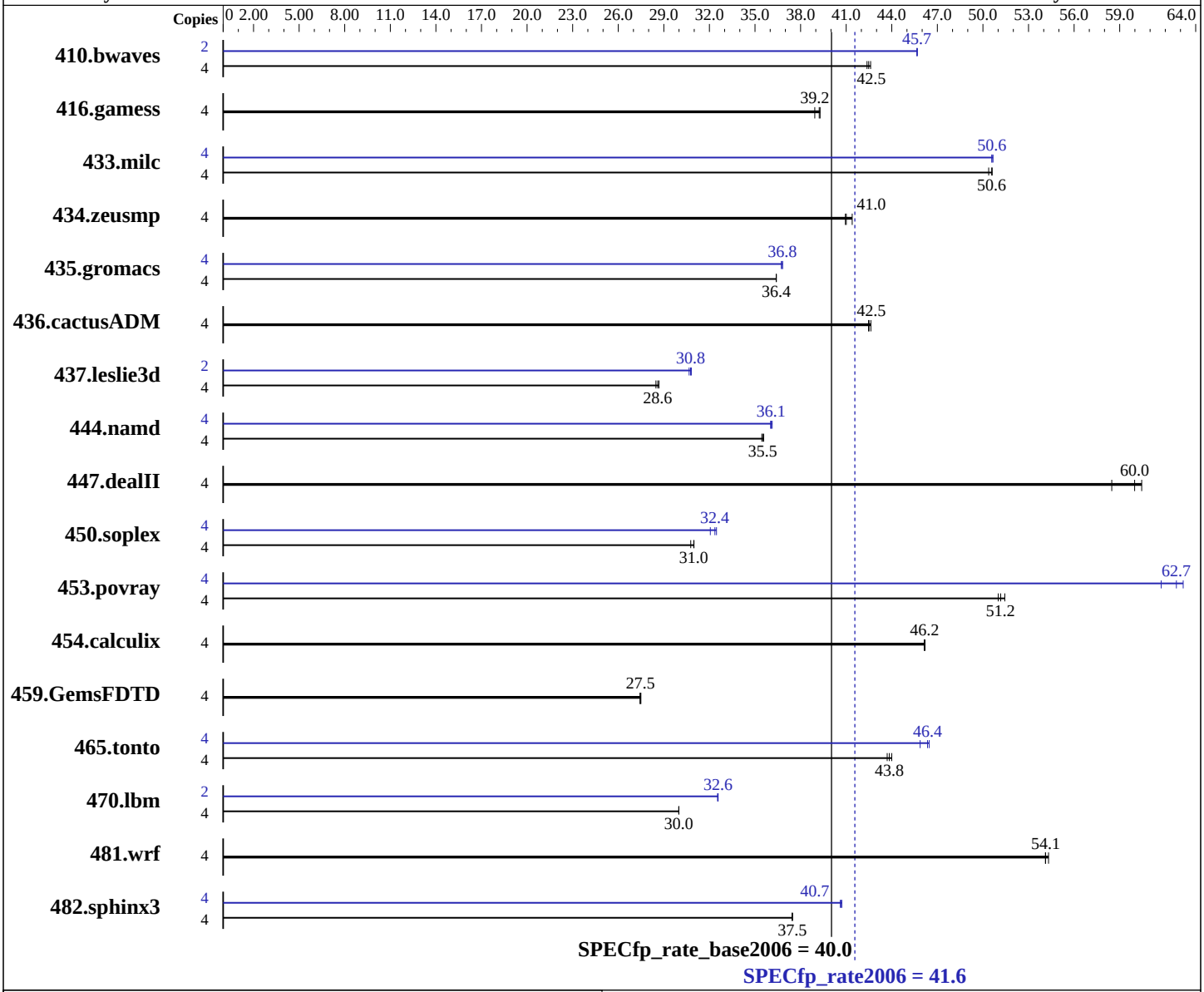
HA8000-bd (Intel Core i5-520E)

SPECfp®_rate2006 = 41.6

SPECfp_rate_base2006 = 40.0

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

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



Hardware

CPU Name:	Intel Core i5-520E
CPU Characteristics:	Intel Turbo Boost Technology disabled
CPU MHz:	2400
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: 3 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 500 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	1283	42.4	1276	42.6	**1280**	**42.5**	2	595	45.7	595	45.7	**595**	**45.7**
416.gamess	4	2012	38.9	**1997**	**39.2**	1994	39.3	4	2012	38.9	**1997**	**39.2**	1994	39.3
433.milc	4	726	50.6	729	50.4	**726**	**50.6**	4	725	50.7	726	50.6	**726**	**50.6**
434.zeusmp	4	**888**	**41.0**	889	40.9	879	41.4	4	**888**	**41.0**	889	40.9	879	41.4
435.gromacs	4	785	36.4	785	36.4	**785**	**36.4**	4	778	36.7	776	36.8	**776**	**36.8**
436.cactusADM	4	**1125**	**42.5**	1121	42.6	1125	42.5	4	**1125**	**42.5**	1121	42.6	1125	42.5
437.leslie3d	4	**1315**	**28.6**	1311	28.7	1320	28.5	2	**611**	**30.8**	610	30.8	613	30.7
444.namd	4	**904**	**35.5**	902	35.6	905	35.4	4	888	36.1	890	36.0	**889**	**36.1**
447.dealII	4	757	60.4	783	58.5	**763**	**60.0**	4	757	60.4	783	58.5	**763**	**60.0**
450.soplex	4	1084	30.8	1077	31.0	**1077**	**31.0**	4	1041	32.1	1028	32.5	**1031**	**32.4**
453.povray	4	414	51.4	417	51.0	**416**	**51.2**	4	345	61.7	**339**	**62.7**	337	63.2
454.calculix	4	714	46.2	715	46.1	**715**	**46.2**	4	714	46.2	715	46.1	**715**	**46.2**
459.GemsFDTD	4	1547	27.4	1544	27.5	**1546**	**27.5**	4	1547	27.4	1544	27.5	**1546**	**27.5**
465.tonto	4	895	44.0	901	43.7	**898**	**43.8**	4	**849**	**46.4**	847	46.5	858	45.9
470.lbm	4	1833	30.0	1832	30.0	**1833**	**30.0**	2	844	32.6	845	32.5	**844**	**32.6**
481.wrf	4	**826**	**54.1**	823	54.3	826	54.1	4	**826**	**54.1**	823	54.3	826	54.1
482.sphinx3	4	**2081**	**37.5**	2083	37.4	2081	37.5	4	**1917**	**40.7**	1920	40.6	1915	40.7

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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