SPEC® CFP2006 Result

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Huawei

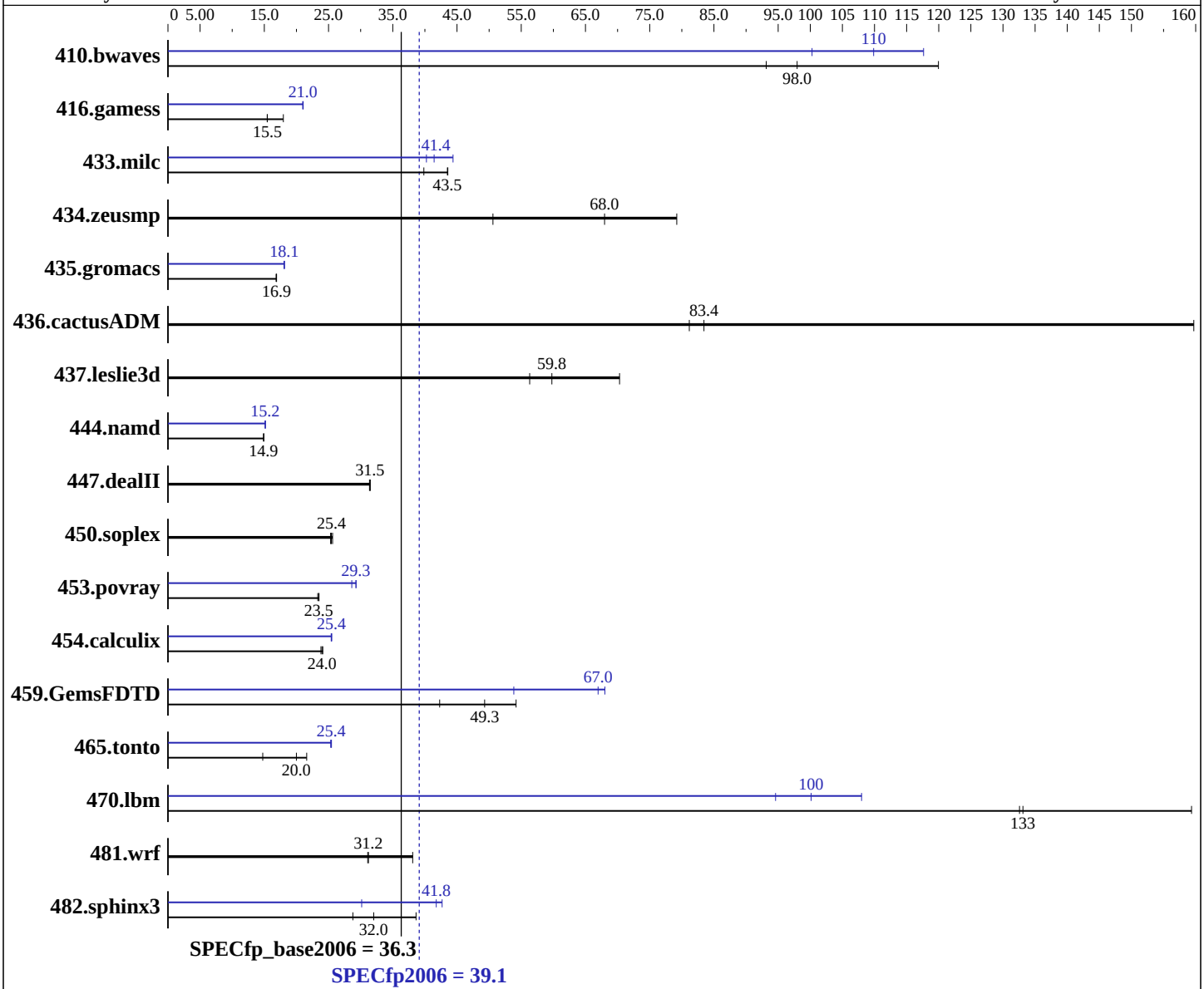
Huawei XH620,Intel Xeon E5520

SPECfp®2006 = 39.1

SPECfp_base2006 = 36.3

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

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



Hardware

CPU Name:	Intel Xeon E5520
CPU Characteristics:	Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12 Alpha Build 20110105
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 300 GB SAS, 15K RPM
Other Hardware: None

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	113	120	**139**	**98.0**	146	93.1	116	118	136	100	**124**	**110**
416.gamess	1267	15.5	**1265**	**15.5**	1090	18.0	933	21.0	930	21.1	**932**	**21.0**
433.milc	230	39.8	211	43.6	**211**	**43.5**	228	40.2	207	44.4	**222**	**41.4**
434.zeusmp	115	79.2	180	50.6	**134**	**68.0**	115	79.2	180	50.6	**134**	**68.0**
435.gromacs	424	16.8	**423**	**16.9**	422	16.9	395	18.1	394	18.1	**394**	**18.1**
436.cactusADM	**143**	**83.4**	147	81.2	74.8	160	**143**	**83.4**	147	81.2	74.8	160
437.leslie3d	**157**	**59.8**	167	56.3	134	70.3	**157**	**59.8**	167	56.3	134	70.3
444.namd	538	14.9	**538**	**14.9**	538	14.9	530	15.1	529	15.2	**529**	**15.2**
447.dealII	**363**	**31.5**	365	31.4	363	31.5	**363**	**31.5**	365	31.4	363	31.5
450.soplex	329	25.3	**328**	**25.4**	325	25.6	329	25.3	**328**	**25.4**	325	25.6
453.povray	**227**	**23.5**	228	23.3	226	23.5	182	29.3	186	28.6	**182**	**29.3**
454.calculix	346	23.8	342	24.1	**344**	**24.0**	323	25.5	**324**	**25.4**	325	25.4
459.GemsFDTD	251	42.3	**215**	**49.3**	196	54.2	**158**	**67.0**	156	68.0	197	53.8
465.tonto	**492**	**20.0**	456	21.6	667	14.8	388	25.3	**387**	**25.4**	387	25.5
470.lbm	**103**	**133**	86.2	159	104	133	127	108	**137**	**100**	145	94.6
481.wrf	293	38.1	359	31.1	**358**	**31.2**	293	38.1	359	31.1	**358**	**31.2**
482.sphinx3	677	28.8	505	38.6	**608**	**32.0**	646	30.2	**467**	**41.8**	457	42.7

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 were not configured on the system.
```

Platform Notes

```
Data Reuse Optimization disabled in BIOS Setup.
```

General Notes

```
Binaries compiled on RHEL 5.5
OMP_NUM_THREADS set to number of cores
```

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

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

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Peak Optimization Flags (Continued)

Fortran benchmarks:

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: -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 -opt-prefetch -parallel -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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/HUAWEI-platform-linux64-revA.html
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html

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

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For other inquiries, please contact webmaster@spec.org.

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