



SPEC[®] CFP2006 Result

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Huawei Tecal RH5885 V2

SPECfp[®]_rate2006 = 751

SPECfp_rate_base2006 = 740

CPU2006 license: 13

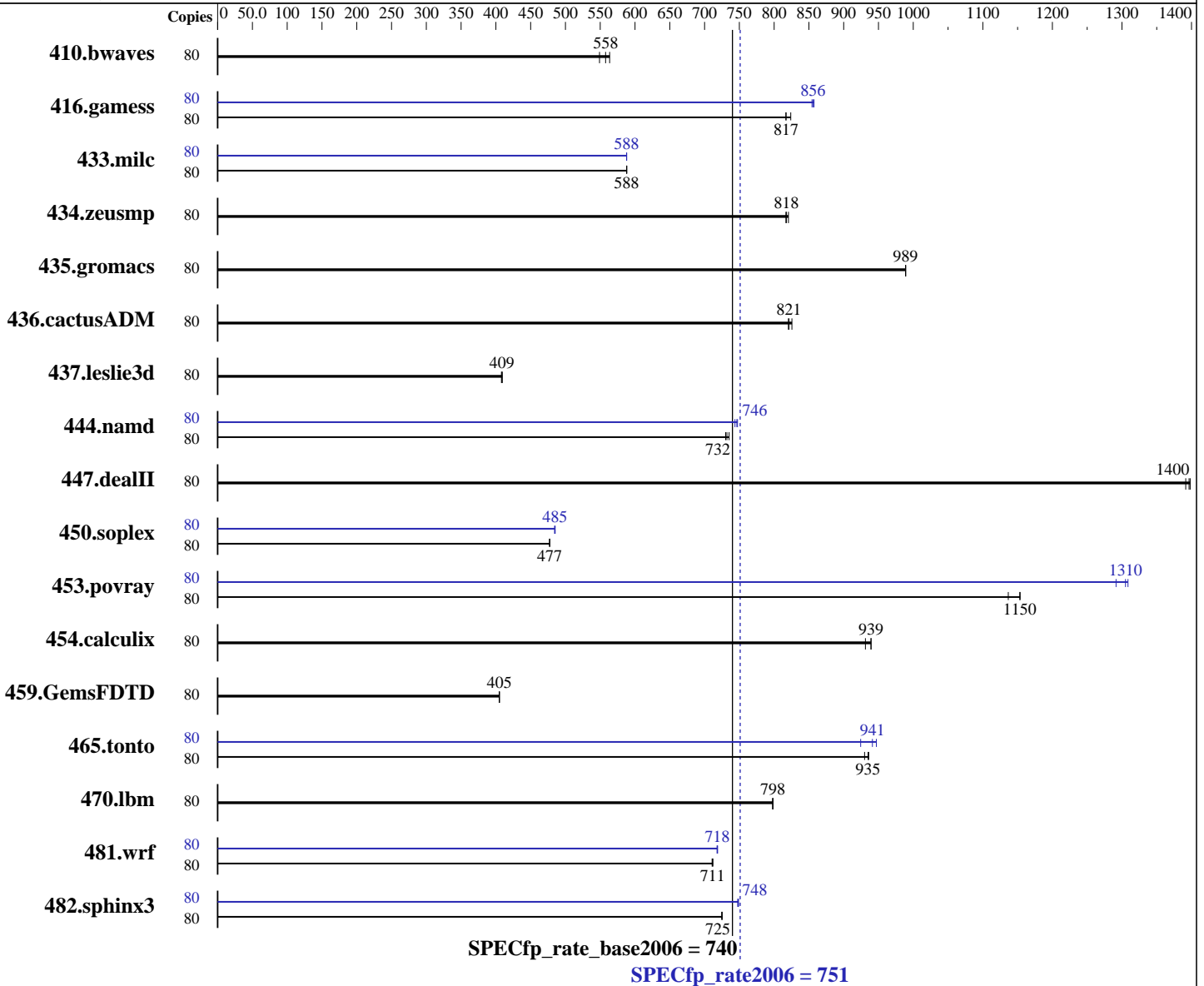
Test sponsor: Huawei

Tested by: Huawei

Test date: Oct-2012

Hardware Availability: Oct-2012

Software Availability: Oct-2012



Hardware

CPU Name: Intel Xeon E7-8870
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4,8 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: RedHat EL 6.2
 Compiler: C/C++: Version 13.0.0.079 of Intel C++ Studio XE for Linux;
 Fortran: Version 13.0.0.079 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit

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L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (64 x 16 GB 4Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem: 2x300 GB SAS, 10K RPM
Other Hardware: None

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	80	1929	564	1980	549	<u>1949</u>	<u>558</u>	80	1929	564	1980	549	<u>1949</u>	<u>558</u>
416.gamess	80	<u>1917</u>	<u>817</u>	1918	817	1901	824	80	1833	854	<u>1830</u>	<u>856</u>	1827	857
433.milc	80	<u>1249</u>	<u>588</u>	1249	588	1249	588	80	1249	588	<u>1249</u>	<u>588</u>	1249	588
434.zeusmp	80	891	817	<u>890</u>	<u>818</u>	887	821	80	891	817	<u>890</u>	<u>818</u>	887	821
435.gromacs	80	<u>578</u>	<u>989</u>	578	989	578	989	80	<u>578</u>	<u>989</u>	578	989	578	989
436.cactusADM	80	<u>1164</u>	<u>821</u>	1165	820	1158	826	80	<u>1164</u>	<u>821</u>	1165	820	1158	826
437.leslie3d	80	1838	409	<u>1840</u>	<u>409</u>	1843	408	80	1838	409	<u>1840</u>	<u>409</u>	1843	408
444.namd	80	873	735	<u>876</u>	<u>732</u>	879	730	80	858	747	<u>860</u>	<u>746</u>	863	744
447.dealII	80	655	1400	658	1390	<u>655</u>	<u>1400</u>	80	655	1400	658	1390	<u>655</u>	<u>1400</u>
450.soplex	80	<u>1398</u>	<u>477</u>	1398	477	1398	477	80	1375	485	<u>1376</u>	<u>485</u>	1378	484
453.povray	80	374	1140	369	1150	<u>369</u>	<u>1150</u>	80	325	1310	<u>326</u>	<u>1310</u>	330	1290
454.calculix	80	709	931	703	939	<u>703</u>	<u>939</u>	80	709	931	703	939	<u>703</u>	<u>939</u>
459.GemsFDTD	80	2097	405	<u>2096</u>	<u>405</u>	2095	405	80	2097	405	<u>2096</u>	<u>405</u>	2095	405
465.tonto	80	<u>842</u>	<u>935</u>	846	930	841	936	80	<u>836</u>	<u>941</u>	831	947	852	924
470.lbm	80	1377	799	1378	798	<u>1377</u>	<u>798</u>	80	1377	799	1378	798	<u>1377</u>	<u>798</u>
481.wrf	80	<u>1256</u>	<u>711</u>	1257	711	1255	712	80	<u>1244</u>	<u>718</u>	1243	719	1245	718
482.sphinx3	80	<u>2150</u>	<u>725</u>	2152	725	2150	725	80	2082	749	<u>2084</u>	<u>748</u>	2086	748

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"



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General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Binaries compiled on a system with 4 x Xeon E7-8870 CPU + 1024 GB memory using RHEL6.2
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

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.deallI: -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



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Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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.deallI: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -static -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
-unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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

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Peak Optimization Flags (Continued)

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) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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