



SPEC® CFP2006 Result

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Huawei

SPECfp®_rate2006 = 466

Huawei RH2288H V2 (Intel Xeon E5-2650L v2)

SPECfp_rate_base2006 = 456

CPU2006 license: 3175

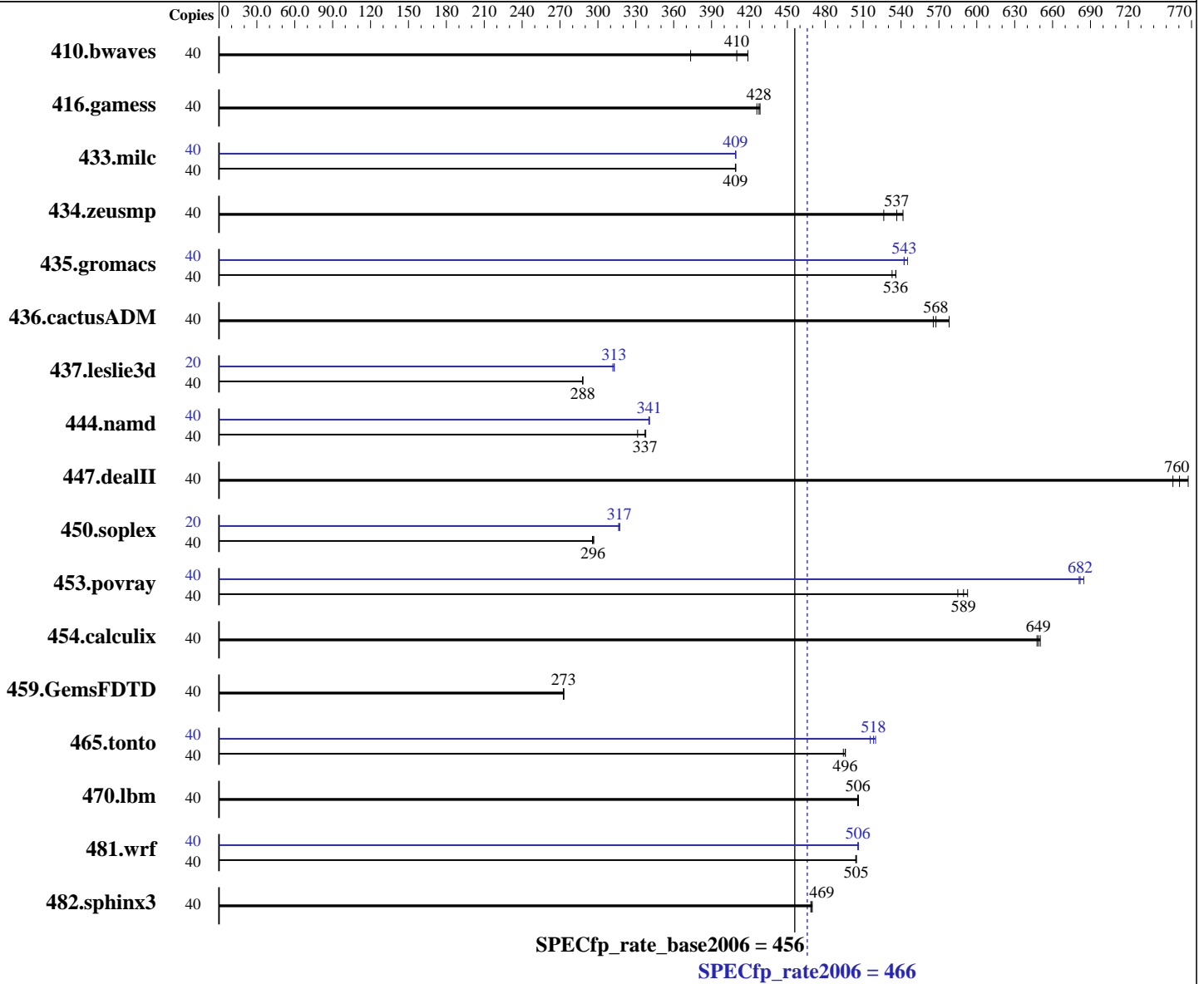
Test sponsor: Huawei

Tested by: Huawei

Test date: Aug-2014

Hardware Availability: Sep-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2650L v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.10 GHz
 CPU MHz: 1700
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 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

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Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 2.6.32-431.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext4

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L3 Cache: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx8 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM
 Other Hardware: None

System State: Run level 3 (multi-user)
 Base Pointers: 32/64-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	40	1298	419	1456	373	<u>1326</u>	<u>410</u>	40	1298	419	1456	373	<u>1326</u>	<u>410</u>
416.gamess	40	1839	426	<u>1832</u>	<u>428</u>	1828	428	40	1839	426	<u>1832</u>	<u>428</u>	1828	428
433.milc	40	<u>898</u>	<u>409</u>	898	409	897	409	40	<u>898</u>	<u>409</u>	898	409	897	409
434.zeusmp	40	<u>678</u>	<u>537</u>	672	542	692	526	40	<u>678</u>	<u>537</u>	672	542	692	526
435.gromacs	40	536	533	<u>533</u>	<u>536</u>	533	536	40	527	542	<u>526</u>	<u>543</u>	524	545
436.cactusADM	40	845	566	827	578	<u>842</u>	<u>568</u>	40	845	566	827	578	<u>842</u>	<u>568</u>
437.leslie3d	40	<u>1306</u>	<u>288</u>	1306	288	1306	288	20	603	312	601	313	<u>601</u>	<u>313</u>
444.namd	40	949	338	<u>951</u>	<u>337</u>	968	331	40	<u>942</u>	<u>341</u>	943	340	941	341
447.dealII	40	596	767	606	755	<u>602</u>	<u>760</u>	40	596	767	606	755	<u>602</u>	<u>760</u>
450.soplex	40	1124	297	<u>1126</u>	<u>296</u>	1128	296	20	527	316	<u>526</u>	<u>317</u>	526	317
453.povray	40	364	585	359	593	<u>361</u>	<u>589</u>	40	<u>312</u>	<u>682</u>	311	685	312	681
454.calculix	40	507	650	<u>509</u>	<u>649</u>	510	648	40	507	650	<u>509</u>	<u>649</u>	510	648
459.GemsFDTD	40	1556	273	<u>1556</u>	<u>273</u>	1554	273	40	1556	273	<u>1556</u>	<u>273</u>	1554	273
465.tonto	40	794	496	<u>794</u>	<u>496</u>	796	494	40	757	520	<u>759</u>	<u>518</u>	763	516
470.lbm	40	<u>1087</u>	<u>506</u>	1087	506	1086	506	40	<u>1087</u>	<u>506</u>	1087	506	1086	506
481.wrf	40	885	505	886	504	<u>886</u>	<u>505</u>	40	883	506	<u>883</u>	<u>506</u>	883	506
482.sphinx3	40	<u>1662</u>	<u>469</u>	1660	470	1664	469	40	<u>1662</u>	<u>469</u>	1660	470	1664	469

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"

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Custom
Baseboard Management Controller used to adjust the fan speed to 100%

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Platform Notes (Continued)

Sysinfo program /spec/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on wbspeccpu Fri Aug 29 22:12:37 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2650L v2 @ 1.70GHz
2 "physical id"s (chips)
40 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 10
siblings : 20
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB

From /proc/meminfo
MemTotal: 132103760 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux wbspeccpu 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 22 01:34

SPEC is set to: /spec
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdal ext4 270G 149G 108G 59% /

Additional information from dmidecode:
BIOS Insyde Corp. RMIBV629 05/12/2014
Memory:
16x Hynix HMT41GR7MFR8C-PB 8 GB 1600 MHz 2 rank
8x NO DIMM NO DIMM

(End of data from sysinfo program)



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General Notes

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

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /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:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

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

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Peak Portability Flags (Continued)

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

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(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) -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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: -xAVX(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: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(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

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(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-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>

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