



SPEC® CFP2006 Result

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Huawei

SPECfp®2006 = **68.3**

Huawei CH240 (Intel Xeon E5-4620)

SPECfp_base2006 = **65.5**

CPU2006 license: 3175

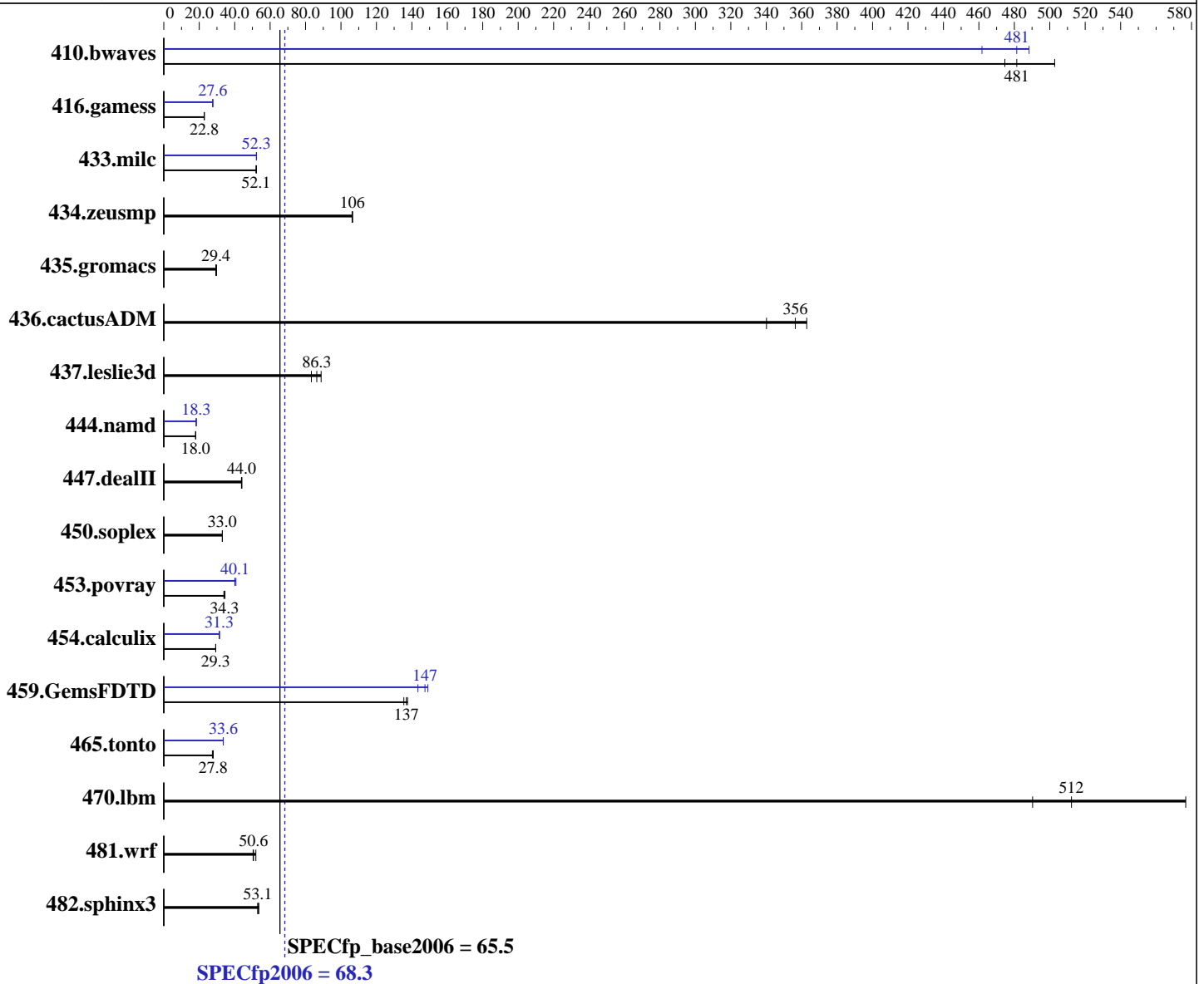
Test sponsor: Huawei

Tested by: Huawei

Test date: Jul-2014

Hardware Availability: May-2012

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-4620
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip
 CPU(s) orderable: 2,4 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 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 16 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
 Other Hardware: None

System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 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	28.6	475	27.0	503	<u>28.2</u>	<u>481</u>	29.4	462	<u>28.2</u>	<u>481</u>	27.8	488
416.gamess	860	22.8	<u>859</u>	<u>22.8</u>	854	22.9	709	27.6	708	27.7	<u>709</u>	<u>27.6</u>
433.milc	<u>176</u>	<u>52.1</u>	176	52.1	176	52.3	176	52.3	176	52.3	<u>176</u>	<u>52.3</u>
434.zeusmp	85.6	106	85.4	106	<u>85.4</u>	<u>106</u>	85.6	106	85.4	106	<u>85.4</u>	<u>106</u>
435.gromacs	243	29.4	240	29.8	<u>243</u>	<u>29.4</u>	243	29.4	240	29.8	<u>243</u>	<u>29.4</u>
436.cactusADM	35.1	340	<u>33.5</u>	<u>356</u>	32.9	363	35.1	340	<u>33.5</u>	<u>356</u>	32.9	363
437.leslie3d	<u>109</u>	<u>86.3</u>	113	83.3	106	88.8	<u>109</u>	<u>86.3</u>	113	83.3	106	88.8
444.namd	446	18.0	<u>446</u>	<u>18.0</u>	446	18.0	438	18.3	<u>438</u>	<u>18.3</u>	438	18.3
447.dealII	<u>260</u>	<u>44.0</u>	260	44.0	261	43.8	<u>260</u>	<u>44.0</u>	260	44.0	261	43.8
450.soplex	252	33.1	<u>252</u>	<u>33.0</u>	253	33.0	252	33.1	<u>252</u>	<u>33.0</u>	253	33.0
453.povray	157	33.9	154	34.5	<u>155</u>	<u>34.3</u>	133	40.1	131	40.7	<u>133</u>	<u>40.1</u>
454.calculix	<u>281</u>	<u>29.3</u>	282	29.3	281	29.3	263	31.3	262	31.4	<u>263</u>	<u>31.3</u>
459.GemsFDTD	78.3	135	77.1	138	<u>77.5</u>	<u>137</u>	74.0	143	71.2	149	<u>72.0</u>	<u>147</u>
465.tonto	<u>354</u>	<u>27.8</u>	353	27.9	359	27.4	293	33.6	294	33.5	<u>293</u>	<u>33.6</u>
470.lbm	23.8	577	<u>26.8</u>	<u>512</u>	28.0	490	23.8	577	<u>26.8</u>	<u>512</u>	28.0	490
481.wrf	<u>221</u>	<u>50.6</u>	215	52.0	222	50.4	<u>221</u>	<u>50.6</u>	215	52.0	222	50.4
482.sphinx3	363	53.6	367	53.1	<u>367</u>	<u>53.1</u>	363	53.6	367	53.1	<u>367</u>	<u>53.1</u>

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

Operating System Notes

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

Platform Notes

Sysinfo program /spec/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on localhost.localdomain Thu Jul 17 14:13:41 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 E5-4620 0 @ 2.20GHz
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Platform Notes (Continued)

```

4 "physical id"s (chips)
32 "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 : 8
siblings  : 8
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7
cache size : 16384 KB

```

```

From /proc/meminfo
MemTotal:      529228328 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 localhost.localdomain 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 Jul 17 05:30

```

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  411G  17G  374G   5% /

```

```

Additional information from dmidecode:
Memory:
32x Hynix HMT42GR7MFR4C-PB 16 GB 1600 MHz 2 rank

```

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

```

KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "32"

```

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

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General Notes (Continued)

Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

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:
 -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
 -ansi-alias

C++ benchmarks:
 -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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Base Optimization Flags (Continued)

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -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: `-xAVX(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: `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) -prof-use(pass 2) -fno-alias
-auto-ilp32`

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Peak Optimization Flags (Continued)

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

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

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(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: -xAVX(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

465.tonto: -xAVX(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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -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/Intel-ic12.1-official-linux64.20120425.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-ic12.1-official-linux64.20120425.xml>

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



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