



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]2006 = 73.1

Huawei RH1288 V2 (Intel Xeon E5-2630 2.30 GHz)

SPECfp_base2006 = 70.7

CPU2006 license: 3175

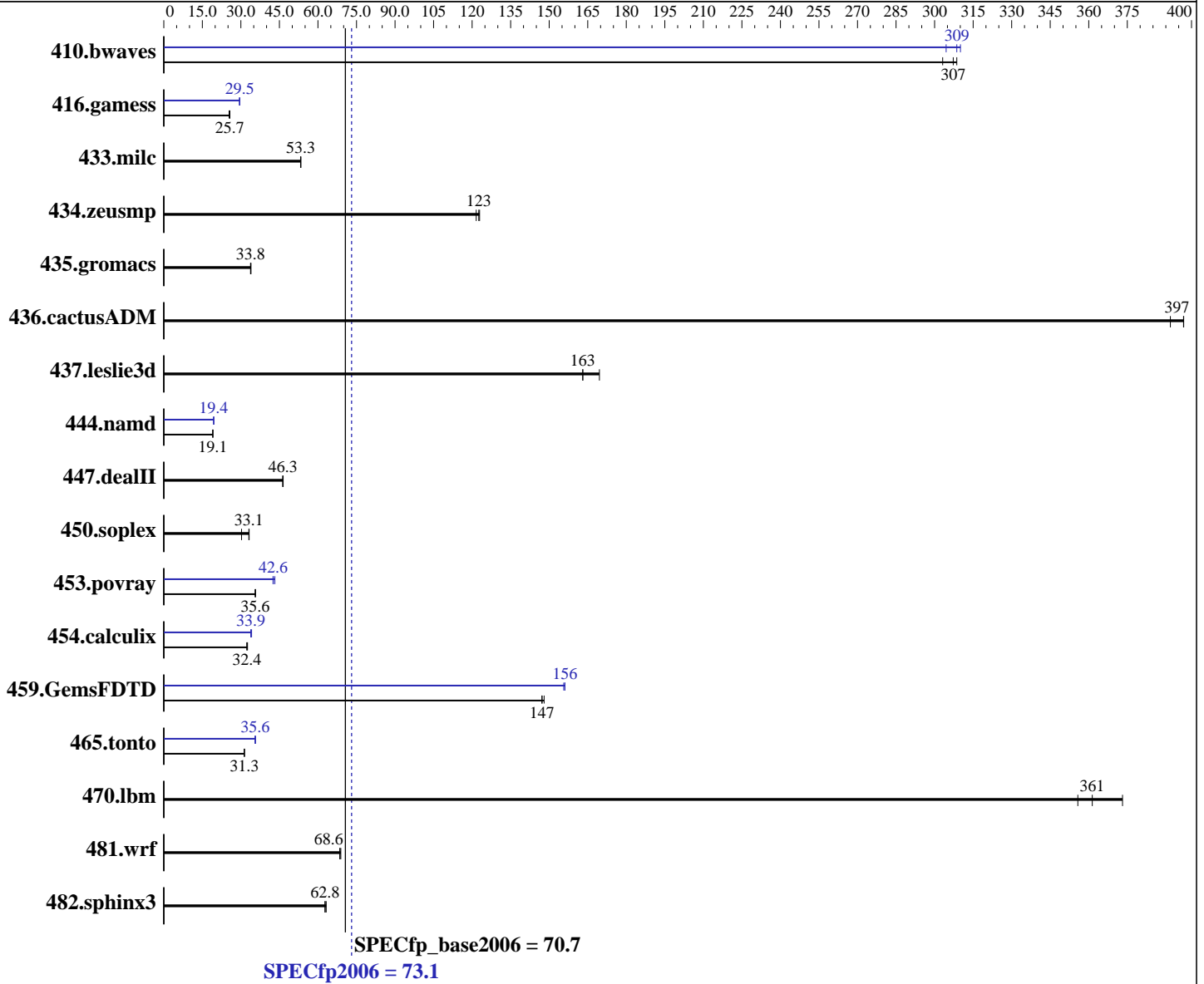
Test date: Jun-2013

Test sponsor: Huawei

Hardware Availability: May-2012

Tested by: Huawei

Software Availability: Feb-2013



Hardware

CPU Name: Intel Xeon E5-2630
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
 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: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.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

Continued on next page



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L3 Cache: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 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	44.0	309	44.8	303	<u>44.2</u>	<u>307</u>	44.6	304	43.8	310	<u>44.0</u>	<u>309</u>
416.gamess	761	25.7	770	25.4	<u>762</u>	<u>25.7</u>	<u>663</u>	<u>29.5</u>	665	29.5	663	29.5
433.milc	172	53.2	<u>172</u>	<u>53.3</u>	172	53.4	172	53.2	<u>172</u>	<u>53.3</u>	172	53.4
434.zeusmp	<u>74.2</u>	<u>123</u>	74.0	123	74.8	122	<u>74.2</u>	<u>123</u>	74.0	123	74.8	122
435.gromacs	211	33.8	<u>211</u>	<u>33.8</u>	210	33.9	211	33.8	<u>211</u>	<u>33.8</u>	210	33.9
436.cactusADM	30.1	397	30.5	392	<u>30.1</u>	<u>397</u>	30.1	397	30.5	392	<u>30.1</u>	<u>397</u>
437.leslie3d	<u>57.6</u>	<u>163</u>	57.6	163	55.4	170	<u>57.6</u>	<u>163</u>	57.6	163	55.4	170
444.namd	420	19.1	<u>420</u>	<u>19.1</u>	420	19.1	413	19.4	<u>413</u>	<u>19.4</u>	413	19.4
447.dealII	246	46.5	247	46.3	<u>247</u>	<u>46.3</u>	246	46.5	247	46.3	<u>247</u>	<u>46.3</u>
450.soplex	251	33.2	<u>252</u>	<u>33.1</u>	276	30.3	251	33.2	<u>252</u>	<u>33.1</u>	276	30.3
453.povray	<u>149</u>	<u>35.6</u>	149	35.7	150	35.6	123	43.2	<u>125</u>	<u>42.6</u>	125	42.5
454.calculix	253	32.6	<u>255</u>	<u>32.4</u>	255	32.3	<u>243</u>	<u>33.9</u>	243	33.9	241	34.2
459.GemsFDTD	<u>72.1</u>	<u>147</u>	72.1	147	71.7	148	<u>68.0</u>	<u>156</u>	68.2	156	68.0	156
465.tonto	314	31.3	314	31.4	<u>314</u>	<u>31.3</u>	<u>277</u>	<u>35.6</u>	276	35.7	277	35.5
470.lbm	36.8	373	38.6	356	<u>38.0</u>	<u>361</u>	36.8	373	38.6	356	<u>38.0</u>	<u>361</u>
481.wrf	163	68.5	162	68.9	<u>163</u>	<u>68.6</u>	163	68.5	162	68.9	<u>163</u>	<u>68.6</u>
482.sphinx3	311	62.7	308	63.2	<u>310</u>	<u>62.8</u>	311	62.7	308	63.2	<u>310</u>	<u>62.8</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"
 Select only test related files when installing the operating system

Platform Notes

BIOS configuration:
 Set Power Efficiency Mode to Performance
 Baseboard Management Controller used to adjust the fan speed to 100%
 Sysinfo program /spec/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on localhost Mon Jun 3 23:58:34 2013

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```
model name : Intel(R) Xeon(R) CPU E5-2630 0 @ 2.30GHz
 2 "physical id"s (chips)
 12 "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 : 6
siblings   : 6
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

From /proc/meminfo

```
MemTotal:      132117844 kB
HugePages_Total: 0
Hugepagesize:   2048 kB
```

/usr/bin/lsb_release -d

```
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

From /etc/*release* /etc/*version*

```
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux localhost 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jun 3 16:50

SPEC is set to: /spec

```
Filesystem      Type      Size Used Avail Use% Mounted on
/dev/sda2        ext4      193G   66G  117G  37% /
```

Additional information from dmidecode:

(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 = "12"
```

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

Continued on next page



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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

Continued on next page



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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: basepeak = yes

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`

447.dealII: basepeak = yes

Continued on next page



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Peak Optimization Flags (Continued)

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-revE.20121120.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-revE.20121120.xml>



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