



SPEC® CFP2006 Result

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Huawei

SPECfp®2006 = 107

Huawei RH2288 V3 (Intel Xeon E5-2660 v3)

SPECfp_base2006 = 102

CPU2006 license: 3175

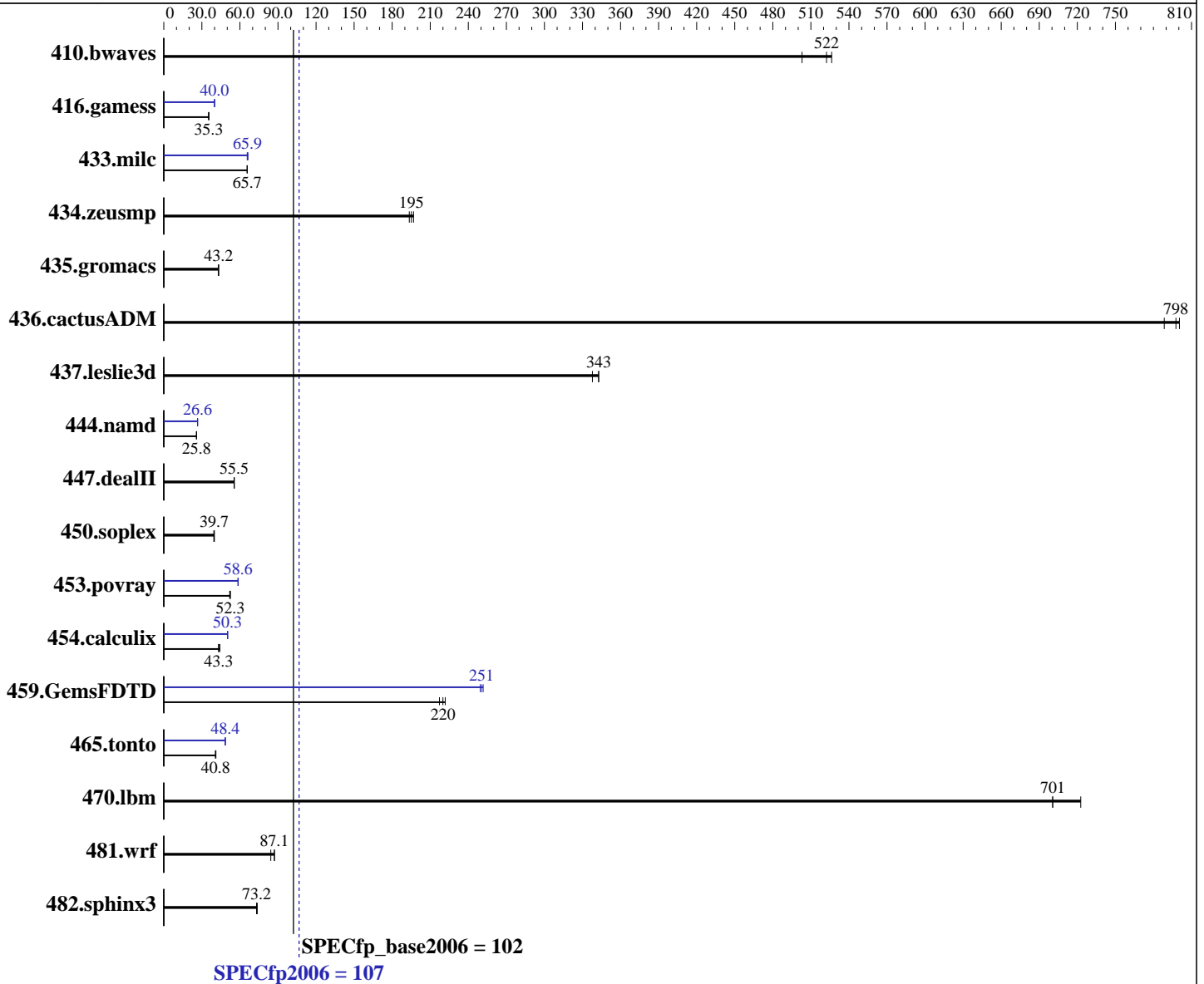
Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2014

Hardware Availability: Sep-2014

Software Availability: Jun-2014



Hardware

CPU Name: Intel Xeon E5-2660 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 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

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Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
 3.10.0-123.el7.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: Yes
 File System: xfs

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L3 Cache: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
 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	25.8	526	<u>26.0</u>	<u>522</u>	27.0	503	25.8	526	<u>26.0</u>	<u>522</u>	27.0	503
416.gamess	554	35.3	551	35.5	<u>554</u>	<u>35.3</u>	490	39.9	<u>490</u>	<u>40.0</u>	488	40.1
433.milc	140	65.7	140	65.8	<u>140</u>	<u>65.7</u>	140	65.7	138	66.3	<u>139</u>	<u>65.9</u>
434.zeusmp	46.2	197	47.0	193	<u>46.6</u>	<u>195</u>	46.2	197	47.0	193	<u>46.6</u>	<u>195</u>
435.gromacs	<u>165</u>	<u>43.2</u>	165	43.2	166	43.0	<u>165</u>	<u>43.2</u>	165	43.2	166	43.0
436.cactusADM	<u>15.0</u>	<u>798</u>	14.9	800	15.2	788	<u>15.0</u>	<u>798</u>	14.9	800	15.2	788
437.leslie3d	<u>27.4</u>	<u>343</u>	27.4	343	27.8	338	<u>27.4</u>	<u>343</u>	27.4	343	27.8	338
444.namd	311	25.8	311	25.8	<u>311</u>	<u>25.8</u>	301	26.6	301	26.6	<u>301</u>	<u>26.6</u>
447.dealII	207	55.4	206	55.5	<u>206</u>	<u>55.5</u>	207	55.4	206	55.5	<u>206</u>	<u>55.5</u>
450.soplex	209	39.8	212	39.4	<u>210</u>	<u>39.7</u>	209	39.8	212	39.4	<u>210</u>	<u>39.7</u>
453.povray	102	51.9	101	52.4	<u>102</u>	<u>52.3</u>	90.7	58.7	<u>90.8</u>	<u>58.6</u>	91.1	58.4
454.calculix	<u>190</u>	<u>43.3</u>	192	43.1	187	44.2	164	50.2	164	50.3	<u>164</u>	<u>50.3</u>
459.GemsFDTD	47.8	222	48.8	217	<u>48.2</u>	<u>220</u>	42.5	249	<u>42.4</u>	<u>251</u>	42.1	252
465.tonto	242	40.7	240	41.1	<u>241</u>	<u>40.8</u>	203	48.6	203	48.4	<u>203</u>	<u>48.4</u>
470.lbm	<u>19.6</u>	<u>701</u>	19.0	723	19.6	701	<u>19.6</u>	<u>701</u>	19.0	723	19.6	701
481.wrf	132	84.3	128	87.2	<u>128</u>	<u>87.1</u>	132	84.3	128	87.2	<u>128</u>	<u>87.1</u>
482.sphinx3	265	73.6	266	73.2	<u>266</u>	<u>73.2</u>	265	73.6	266	73.2	<u>266</u>	<u>73.2</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

BIOS configuration:
 Set Power Efficiency Mode to Custom
 Set Snoop Mode to HS
 Set Hyper-Threading to Disabled
 Set Patrol Scrub to Disable
 Baseboard Management Controller used to adjust the fan speed to 100%
 Sysinfo program /spec14/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e86d102572650a6e4d596a3cee98f191
 running on localhost.localdomain Sun Dec 14 14:20:37 2014

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Platform Notes (Continued)

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 E5-2660 v3 @ 2.60GHz
 2 "physical id"s (chips)
 20 "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     : 10
  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:      263721032 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

```

```

uname -a:
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Dec 14 09:09

```

SPEC is set to: /spec14
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       xfs   98G   17G   81G   18% /

```

```

Additional information from dmidecode:
BIOS Insyde Corp. 1.16 09/02/2014
Memory:
8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

```

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Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

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

LD_LIBRARY_PATH = "/spec14/libs/32:/spec14/libs/64:/spec14/sh"

OMP_NUM_THREADS = "20"

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

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

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Base Portability Flags (Continued)

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -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:

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Peak Optimization Flags (Continued)

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: basepeak = yes

416.gamess: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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Peak Optimization Flags (Continued)

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.20141216.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.20141216.xml>

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

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