



SPEC® CFP2006 Result

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Sugon

SPECfp®2006 = 107

Sugon I620-G20 (Intel Xeon E5-2680 v3)

SPECfp_base2006 = 104

CPU2006 license: 9046

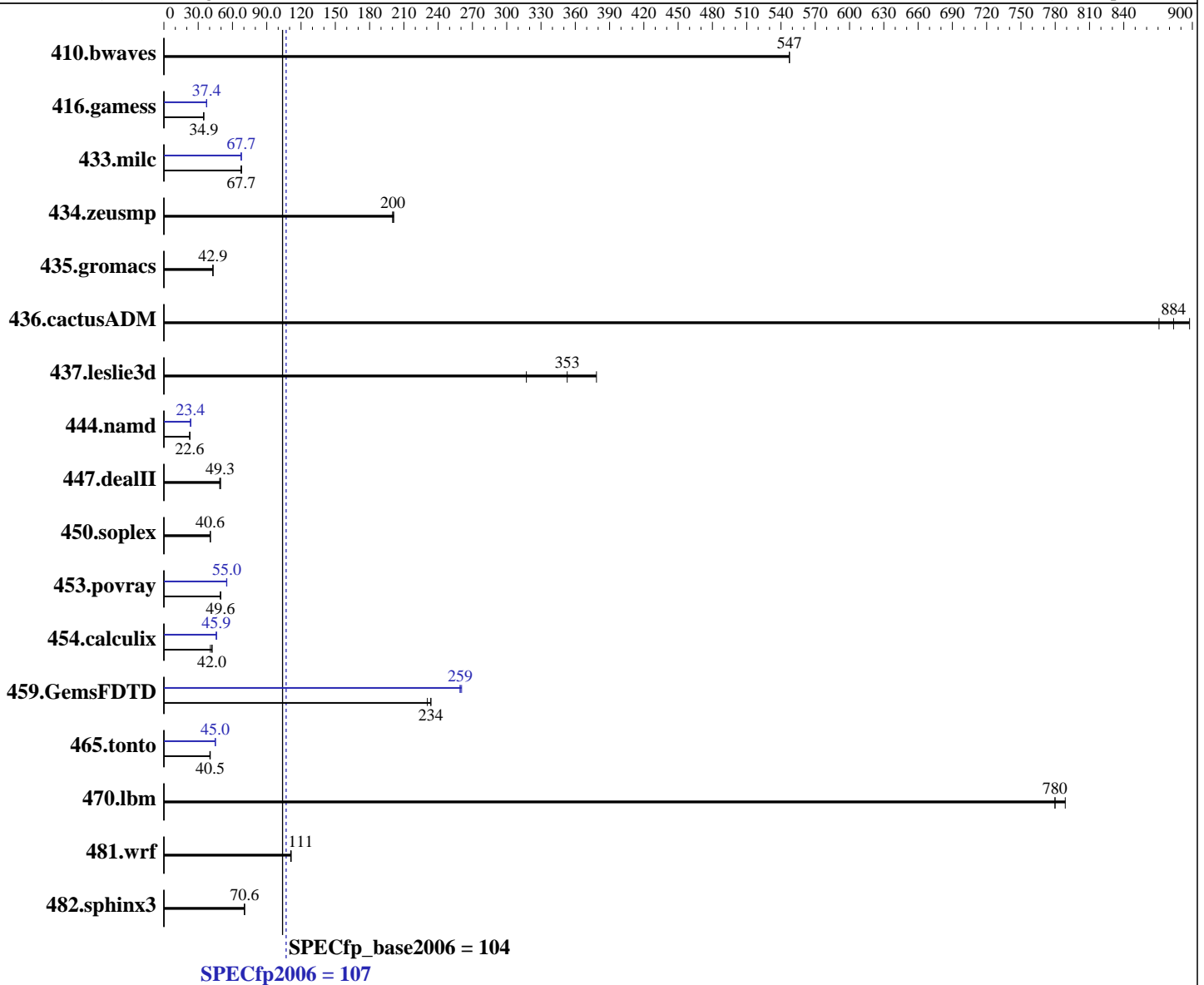
Test date: Sep-2014

Test sponsor: Sugon

Hardware Availability: Sep-2014

Tested by: Sugon

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2680 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 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 6.4 (Santiago)
 2.6.32-358.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: Yes
 File System: ext4

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L3 Cache: 30 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 2.0 TB 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	24.8	547	24.8	547	<u>24.8</u>	<u>547</u>	24.8	547	24.8	547	<u>24.8</u>	<u>547</u>
416.gamess	561	34.9	<u>561</u>	<u>34.9</u>	564	34.7	525	37.3	523	37.4	<u>523</u>	<u>37.4</u>
433.milc	136	67.5	135	68.0	<u>135</u>	<u>67.7</u>	<u>136</u>	<u>67.7</u>	136	67.5	135	67.8
434.zeusmp	45.4	200	45.2	201	<u>45.4</u>	<u>200</u>	45.4	200	45.2	201	<u>45.4</u>	<u>200</u>
435.gromacs	<u>166</u>	<u>42.9</u>	167	42.9	166	42.9	<u>166</u>	<u>42.9</u>	167	42.9	166	42.9
436.cactusADM	13.7	871	<u>13.5</u>	<u>884</u>	13.3	898	13.7	871	<u>13.5</u>	<u>884</u>	13.3	898
437.leslie3d	29.6	317	<u>26.6</u>	<u>353</u>	24.8	379	29.6	317	<u>26.6</u>	<u>353</u>	24.8	379
444.namd	354	22.6	355	22.6	<u>354</u>	<u>22.6</u>	<u>343</u>	<u>23.4</u>	343	23.3	343	23.4
447.dealII	234	48.8	231	49.6	<u>232</u>	<u>49.3</u>	234	48.8	231	49.6	<u>232</u>	<u>49.3</u>
450.soplex	205	40.6	206	40.6	<u>205</u>	<u>40.6</u>	205	40.6	206	40.6	<u>205</u>	<u>40.6</u>
453.povray	107	49.6	<u>107</u>	<u>49.6</u>	108	49.4	96.6	55.1	<u>96.7</u>	<u>55.0</u>	97.1	54.8
454.calculix	203	40.7	<u>196</u>	<u>42.0</u>	195	42.2	180	45.9	180	46.0	<u>180</u>	<u>45.9</u>
459.GemsFDTD	46.0	231	45.4	234	<u>45.4</u>	<u>234</u>	<u>40.9</u>	<u>259</u>	40.9	259	40.7	261
465.tonto	245	40.2	<u>243</u>	<u>40.5</u>	243	40.5	<u>219</u>	<u>45.0</u>	218	45.0	219	44.9
470.lbm	17.4	789	17.6	780	<u>17.6</u>	<u>780</u>	17.4	789	17.6	780	<u>17.6</u>	<u>780</u>
481.wrf	<u>101</u>	<u>111</u>	100	111	101	111	<u>101</u>	<u>111</u>	100	111	101	111
482.sphinx3	<u>276</u>	<u>70.6</u>	277	70.3	276	70.6	<u>276</u>	<u>70.6</u>	277	70.3	276	70.6

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:
 Enforce POR set to disabled
 DDR Speed set to 2133
 Early Snoop set to disabled
 COD set to disable
 Power Technology set to performance
 Sysinfo program /home/cpu2006/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on localhost Fri Sep 26 02:35:37 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 E5-2680 v3 @ 2.50GHz
 2 "physical id"s (chips)
 48 "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    : 12
  siblings    : 24
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size    : 30720 KB

```

```

From /proc/meminfo
MemTotal:      264477580 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 Sep 24 09:56

```

SPEC is set to: /home/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda3       ext4      1.8T  411G  1.3T  24% /

```

```

Additional information from dmidecode:
BIOS American Megatrends Inc. 067 08/13/2014
Memory:
 16x 16 GB
 8x NO DIMM NO DIMM
 16x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

```

(End of data from sysinfo program)



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General Notes

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

KMP_AFFINITY = "granularity=fine,compact,1,0"

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP_NUM_THREADS = "24"

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>

Submitted_by: Tian Yuwan <tianyw@sugon.com>

Submitted: Wed Nov 5 02:34:00 EST 2014

Submission: cpu2006-20141105-32753.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>

Submitted: Sun Nov 23 21:26:15 EST 2014

Submission: cpu2006-20141105-32753.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>

Submitted: Wed Nov 26 05:11:52 EST 2014

Submission: cpu2006-20141105-32753.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>

Submitted: Thu Nov 27 00:57:34 EST 2014

Submission: cpu2006-20141105-32753.sub

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

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Base Portability Flags (Continued)

```

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:

```

-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

```



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Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

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

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Peak Optimization Flags (Continued)

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

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-ic14.0-official-linux64-revC.html>

<http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-HSW-revA.20141203.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/Sugon-Platform-Settings-V1.2-HSW-revA.20141203.xml>

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

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