



SPEC[®] CFP2006 Result

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Sugon

SPECfp[®]2006 = **87.7**

Sugon I620-G20 (Intel Xeon E5-2637 v3)

SPECfp_base2006 = **85.2**

CPU2006 license: 9046

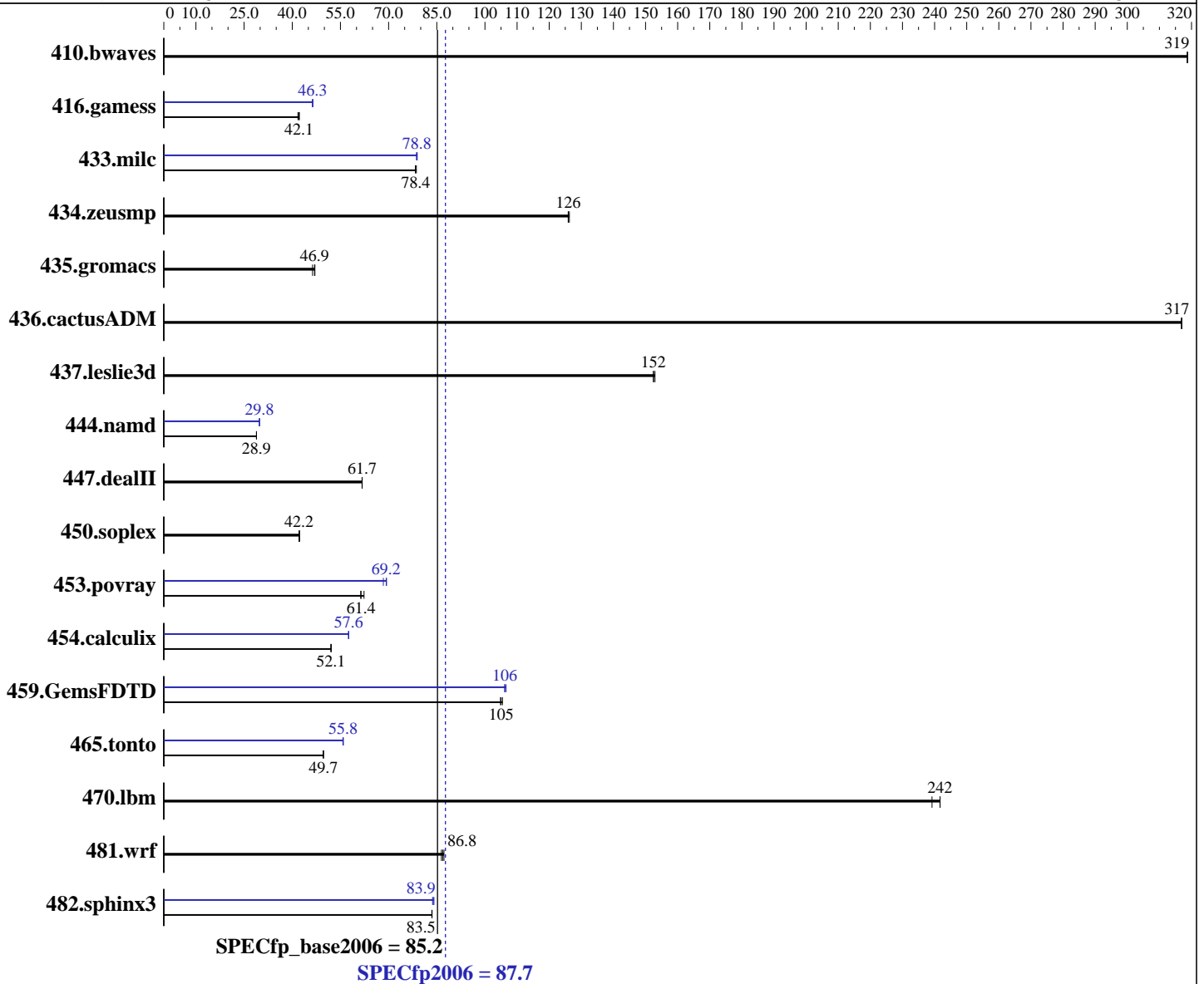
Test sponsor: Sugon

Tested by: Sugon

Test date: Nov-2014

Hardware Availability: Sep-2014

Software Availability: Aug-2014



Hardware

CPU Name: Intel Xeon E5-2637 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3500
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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 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: Yes
 File System: ext4

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L3 Cache: 15 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 7500 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	<u>42.6</u>	<u>319</u>	42.6	319	42.6	319	<u>42.6</u>	<u>319</u>	42.6	319	42.6	319
416.gamess	<u>465</u>	<u>42.1</u>	464	42.2	469	41.8	<u>423</u>	<u>46.3</u>	422	46.4	423	46.3
433.milc	117	78.6	117	78.3	<u>117</u>	<u>78.4</u>	117	78.7	116	78.9	<u>116</u>	<u>78.8</u>
434.zeusmp	<u>72.3</u>	<u>126</u>	72.1	126	72.3	126	<u>72.3</u>	<u>126</u>	72.1	126	72.3	126
435.gromacs	<u>152</u>	<u>46.9</u>	152	47.1	154	46.3	<u>152</u>	<u>46.9</u>	152	47.1	154	46.3
436.cactusADM	37.7	317	<u>37.7</u>	<u>317</u>	37.7	317	37.7	317	<u>37.7</u>	<u>317</u>	37.7	317
437.leslie3d	61.5	153	<u>61.7</u>	<u>152</u>	61.7	152	61.5	153	<u>61.7</u>	<u>152</u>	61.7	152
444.namd	278	28.8	278	28.9	<u>278</u>	<u>28.9</u>	<u>269</u>	<u>29.8</u>	269	29.8	269	29.8
447.dealII	<u>185</u>	<u>61.7</u>	185	61.7	185	61.8	<u>185</u>	<u>61.7</u>	185	61.7	185	61.8
450.soplex	198	42.1	<u>198</u>	<u>42.2</u>	197	42.3	198	42.1	<u>198</u>	<u>42.2</u>	197	42.3
453.povray	<u>86.6</u>	<u>61.4</u>	86.8	61.3	85.3	62.3	77.8	68.4	76.7	69.4	<u>76.8</u>	<u>69.2</u>
454.calculix	159	52.0	158	52.1	<u>158</u>	<u>52.1</u>	143	57.6	143	57.5	<u>143</u>	<u>57.6</u>
459.GemsFDTD	101	105	101	105	<u>101</u>	<u>105</u>	<u>99.9</u>	<u>106</u>	100	106	99.5	107
465.tonto	198	49.7	<u>198</u>	<u>49.7</u>	198	49.7	176	55.8	<u>176</u>	<u>55.8</u>	176	55.9
470.lbm	57.4	239	<u>56.8</u>	<u>242</u>	56.8	242	57.4	239	<u>56.8</u>	<u>242</u>	56.8	242
481.wrf	<u>129</u>	<u>86.8</u>	128	87.2	129	86.4	<u>129</u>	<u>86.8</u>	128	87.2	129	86.4
482.sphinx3	233	83.5	<u>233</u>	<u>83.5</u>	233	83.5	232	84.1	233	83.7	<u>232</u>	<u>83.9</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

Enforce POR set to disabled
 DDR Speed set to 2133
 Early Snoop set to disabled
 COD set to disable
 Hyper-Threading 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 Tue Nov 18 09:32:21 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 E5-2637 v3 @ 3.50GHz
 2 "physical id"s (chips)
 8 "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 : 4
  siblings  : 4
  physical 0: cores 0 1 4 5
  physical 1: cores 0 1 4 5
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:      264482256 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 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 Nov 18 07:33
```

```
SPEC is set to: /home/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext4  1.8T   20G  1.7T   2% /
```

```
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 = "4"

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: Mon Nov 24 01:11:28 EST 2014

Submission: cpu2006-20141124-33216.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
 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

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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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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

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Peak Optimization Flags (Continued)

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.

Tested with SPEC CPU2006 v1.2.

Report generated on Tue Dec 16 13:08:58 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 16 December 2014.