



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp®2006 = 105

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = 101

CPU2006 license: 9046

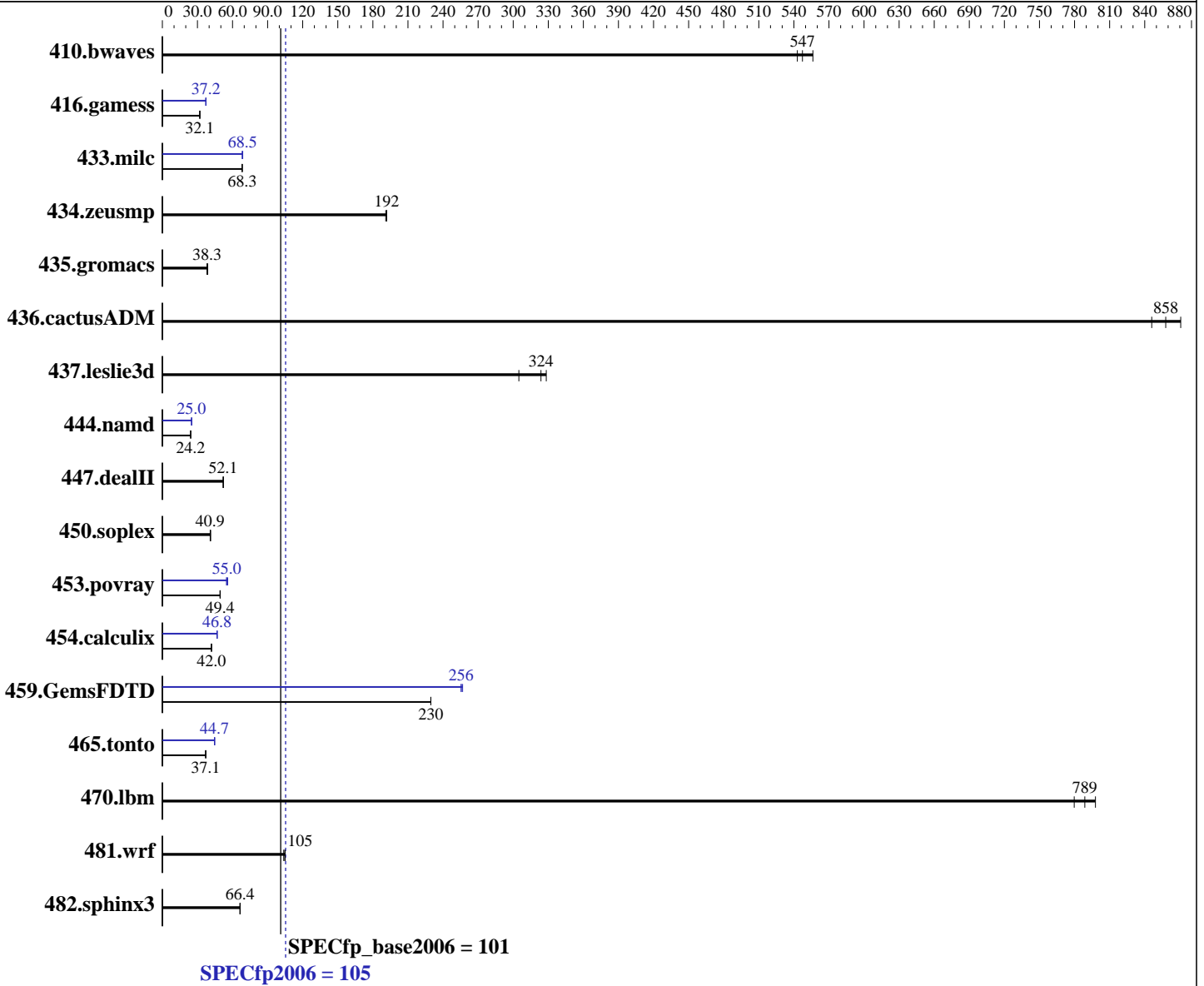
Test date: Oct-2014

Test sponsor: Sugon

Hardware Availability: Sep-2014

Tested by: Sugon

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2670 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
 CPU MHz: 2300
 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

Continued on next page

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp2006 = **105**

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = **101**

CPU2006 license: 9046

Test date: Oct-2014

Test sponsor: Sugon

Hardware Availability: Sep-2014

Tested by: Sugon

Software Availability: Nov-2013

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	<u>24.8</u>	<u>547</u>	24.4	556	25.0	543	<u>24.8</u>	<u>547</u>	24.4	556	25.0	543
416.gamess	610	32.1	<u>611</u>	<u>32.1</u>	614	31.9	<u>527</u>	<u>37.2</u>	524	37.4	527	37.1
433.milc	134	68.4	<u>135</u>	<u>68.3</u>	135	68.1	<u>134</u>	<u>68.5</u>	135	68.2	134	68.7
434.zeusmp	47.6	191	<u>47.4</u>	<u>192</u>	47.4	192	47.6	191	<u>47.4</u>	<u>192</u>	47.4	192
435.gromacs	<u>187</u>	<u>38.3</u>	187	38.2	184	38.8	<u>187</u>	<u>38.3</u>	187	38.2	184	38.8
436.cactusADM	14.1	846	13.7	871	<u>13.9</u>	<u>858</u>	14.1	846	13.7	871	<u>13.9</u>	<u>858</u>
437.leslie3d	<u>29.0</u>	<u>324</u>	30.8	305	28.6	328	<u>29.0</u>	<u>324</u>	30.8	305	28.6	328
444.namd	<u>331</u>	<u>24.2</u>	331	24.2	331	24.2	<u>321</u>	<u>25.0</u>	321	25.0	321	25.0
447.dealII	220	52.0	219	52.2	<u>220</u>	<u>52.1</u>	220	52.0	219	52.2	<u>220</u>	<u>52.1</u>
450.soplex	202	41.3	<u>204</u>	<u>40.9</u>	204	40.9	202	41.3	<u>204</u>	<u>40.9</u>	204	40.9
453.povray	<u>108</u>	<u>49.4</u>	107	49.5	108	49.3	96.9	54.9	95.2	55.9	<u>96.8</u>	<u>55.0</u>
454.calculix	196	42.0	<u>196</u>	<u>42.0</u>	197	41.9	176	46.9	176	46.8	<u>176</u>	<u>46.8</u>
459.GemsFDTD	<u>46.2</u>	<u>230</u>	46.2	230	46.2	230	41.3	257	<u>41.5</u>	<u>256</u>	41.5	256
465.tonto	265	37.2	267	36.9	<u>265</u>	<u>37.1</u>	221	44.6	220	44.7	<u>220</u>	<u>44.7</u>
470.lbm	<u>17.4</u>	<u>789</u>	17.2	798	17.6	780	<u>17.4</u>	<u>789</u>	17.2	798	17.6	780
481.wrf	108	104	<u>107</u>	<u>105</u>	106	105	108	104	<u>107</u>	<u>105</u>	106	105
482.sphinx3	293	66.5	294	66.4	<u>293</u>	<u>66.4</u>	293	66.5	294	66.4	<u>293</u>	<u>66.4</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:
 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.rev6874
 \$Rev: 6874 \$ \$Date:: 2013-11-20 #\$ 654bd3fcf53b06faef0efe54ed011998
 running on localhost Thu Oct 30 15:34:00 2014

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp2006 = 105

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = 101

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Nov-2013

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 E5-2670 v3 @ 2.30GHz
 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:      264477476 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 Oct 30 09:43

```

SPEC is set to: /home/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext4  1.8T  614G  1.1T  36% /

```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. 068 08/15/2014

Memory:

16x Hynix Semiconductor HMA42GR7MFR4N-TFTD 16 GB 2 rank 2133 MHz
8x NO DIMM NO DIMM

(End of data from sysinfo program)



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp2006 = 105

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = 101

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Nov-2013

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: Tue Nov 4 06:04:33 EST 2014

Submission: cpu2006-20141104-32751.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>

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

Submission: cpu2006-20141104-32751.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>

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

Submission: cpu2006-20141104-32751.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>

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

Submission: cpu2006-20141104-32751.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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp2006 = 105

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = 101

CPU2006 license: 9046

Test date: Oct-2014

Test sponsor: Sugon

Hardware Availability: Sep-2014

Tested by: Sugon

Software Availability: Nov-2013

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

```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp2006 = 105

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = 101

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Nov-2013

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp2006 = 105

Sugon I620-G20 (Intel Xeon E5-2670 v3)

SPECfp_base2006 = 101

CPU2006 license: 9046

Test date: Oct-2014

Test sponsor: Sugon

Hardware Availability: Sep-2014

Tested by: Sugon

Software Availability: Nov-2013

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>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Dec 3 10:28:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 2 December 2014.