



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Sugon

SPECfp<sup>®</sup>\_rate2006 = 258

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp\_rate\_base2006 = 255

CPU2006 license: 9046

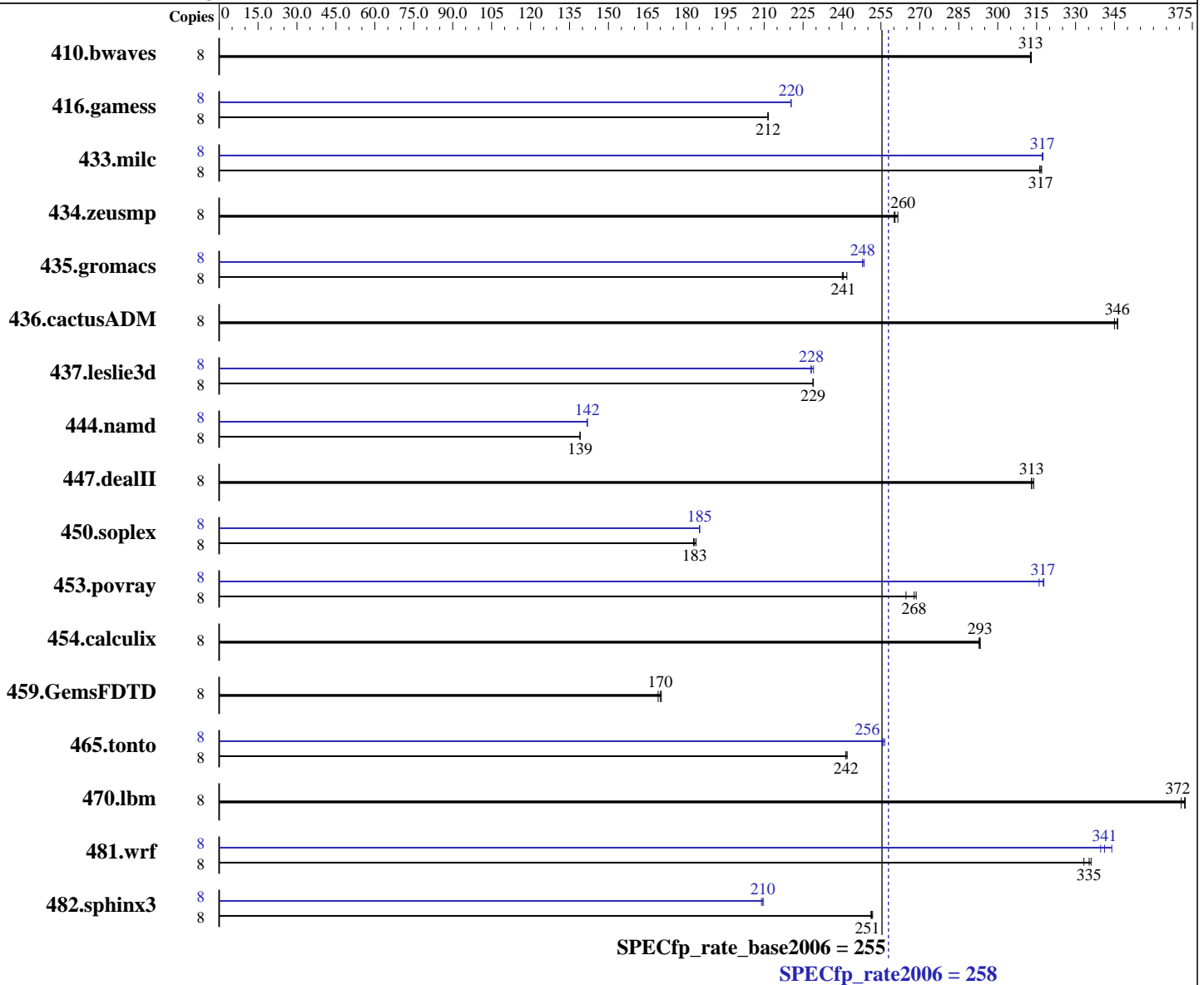
Test sponsor: Sugon

Tested by: Sugon

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Jan-2014



### Hardware

CPU Name: Intel Xeon E5-2609 v2  
 CPU Characteristics:  
 CPU MHz: 2500  
 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

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 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: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Sugon

SPECfp\_rate2006 = **258**

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp\_rate\_base2006 = **255**

CPU2006 license: 9046

Test date: Dec-2013

Test sponsor: Sugon

Hardware Availability: Jan-2014

Tested by: Sugon

Software Availability: Jan-2014

L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)  
 Disk Subsystem: 1 X 2 TB SATA 7200 RPM, RAID 0  
 Other Hardware: None

System State: Run level 3 (Full multiuser with network)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	<b>348</b>	<b>313</b>	347	313	348	313	8	<b>348</b>	<b>313</b>	347	313	348	313		
416.gamess	8	741	211	<b>741</b>	<b>212</b>	740	212	8	<b>711</b>	<b>220</b>	711	220	711	220		
433.milc	8	232	317	232	316	<b>232</b>	<b>317</b>	8	232	317	<b>232</b>	<b>317</b>	231	317		
434.zeusmp	8	278	262	280	260	<b>279</b>	<b>260</b>	8	278	262	280	260	<b>279</b>	<b>260</b>		
435.gromacs	8	<b>237</b>	<b>241</b>	238	240	236	242	8	230	248	230	249	<b>230</b>	<b>248</b>		
436.cactusADM	8	276	346	277	345	<b>276</b>	<b>346</b>	8	276	346	277	345	<b>276</b>	<b>346</b>		
437.leslie3d	8	329	229	328	229	<b>329</b>	<b>229</b>	8	330	228	<b>330</b>	<b>228</b>	328	229		
444.namd	8	<b>461</b>	<b>139</b>	461	139	461	139	8	452	142	<b>452</b>	<b>142</b>	452	142		
447.dealII	8	292	314	<b>292</b>	<b>313</b>	292	313	8	292	314	<b>292</b>	<b>313</b>	292	313		
450.soplex	8	365	183	<b>364</b>	<b>183</b>	363	184	8	360	185	361	185	<b>360</b>	<b>185</b>		
453.povray	8	161	265	158	269	<b>159</b>	<b>268</b>	8	<b>134</b>	<b>317</b>	134	318	135	316		
454.calculix	8	225	293	<b>225</b>	<b>293</b>	225	293	8	225	293	<b>225</b>	<b>293</b>	225	293		
459.GemsFDTD	8	502	169	<b>499</b>	<b>170</b>	498	170	8	502	169	<b>499</b>	<b>170</b>	498	170		
465.tonto	8	<b>326</b>	<b>242</b>	326	241	325	242	8	307	256	308	256	<b>308</b>	<b>256</b>		
470.lbm	8	296	371	295	372	<b>295</b>	<b>372</b>	8	296	371	295	372	<b>295</b>	<b>372</b>		
481.wrf	8	268	333	266	336	<b>267</b>	<b>335</b>	8	260	344	263	340	<b>262</b>	<b>341</b>		
482.sphinx3	8	<b>620</b>	<b>251</b>	619	252	621	251	8	744	210	<b>744</b>	<b>210</b>	746	209		

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Sugon

SPECfp\_rate2006 = 258

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp\_rate\_base2006 = 255

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Jan-2014

### Platform Notes

#### BIOS Configuration:

```

Intel Virtualization technology set to disabled
Power Technology set to performance
Turbo boost set to disabled
DDR Speed set to force 1333
Sysinfo program /home/cpu2006/config/sysinfo.rev6874
$Rev: 6874 $ $Date:: 2013-11-20 #$ 654bd3fcf53b06faef0efe54ed011998
running on cpu2006 Tue Dec 24 05:54:49 2013

```

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 E5-2609 v2 @ 2.50GHz
 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 2 3
  physical 1: cores 0 1 2 3
cache size : 10240 KB

```

#### From /proc/meminfo

```

MemTotal:      264502396 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 cpu2006 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 Dec 23 22:00

#### SPEC is set to: /home/cpu2006

```

Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_cpu2006-lv_home
                ext4      1.8T  63G  1.6T   4% /home

```

#### Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sugon

SPECfp\_rate2006 = 258

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp\_rate\_base2006 = 255

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Jan-2014

## Platform Notes (Continued)

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. 3.0a 10/10/2013

Memory:

16x Hynix Semiconducto HMT42GR7AFR4C 16 GB 1 rank 1333 MHz

(End of data from sysinfo program)

## General Notes

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

LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

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

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

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

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

SPECfp\_rate2006 = 258

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp\_rate\_base2006 = 255

CPU2006 license: 9046

Test date: Dec-2013

Test sponsor: Sugon

Hardware Availability: Jan-2014

Tested by: Sugon

Software Availability: Jan-2014

## Base Portability Flags (Continued)

```

437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deall: -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 -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

```

C++ benchmarks:

```

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

```

Fortran benchmarks:

```

-xAVX -ipo -O3 -no-prec-div -opt-prefetch

```

Benchmarks using both Fortran and C:

```

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

```

## Peak Compiler Invocation

C benchmarks (except as noted below):

```

icc -m64

```

```

482.sphinx3: icc -m32

```

C++ benchmarks (except as noted below):

```

icpc -m64

```

```

450.soplex: icpc -m32

```

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

SPECfp\_rate2006 = 258

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECfp\_rate\_base2006 = 255

CPU2006 license: 9046  
Test sponsor: Sugon  
Tested by: Sugon

Test date: Dec-2013  
Hardware Availability: Jan-2014  
Software Availability: Jan-2014

## Peak 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
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

```

## Peak Optimization Flags

C benchmarks:

```

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -auto-ilp32

```

```

470.lbm: basepeak = yes

```

```

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
            -unroll2

```

C++ benchmarks:

```

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -fno-alias -auto-ilp32

```

```

447.dealII: basepeak = yes

```

```

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -opt-malloc-options=3

```

```

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -unroll4 -ansi-alias

```

Fortran benchmarks:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Sugon

**SPECfp\_rate2006 = 258**

I620-G10 (Intel Xeon E5-2609 v2, 2.50 GHz)

**SPECfp\_rate\_base2006 = 255**

**CPU2006 license:** 9046

**Test sponsor:** Sugon

**Tested by:** Sugon

**Test date:** Dec-2013

**Hardware Availability:** Jan-2014

**Software Availability:** Jan-2014

## Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-IVB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-IVB.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 21:06:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 28 January 2014.