



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp[®]_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

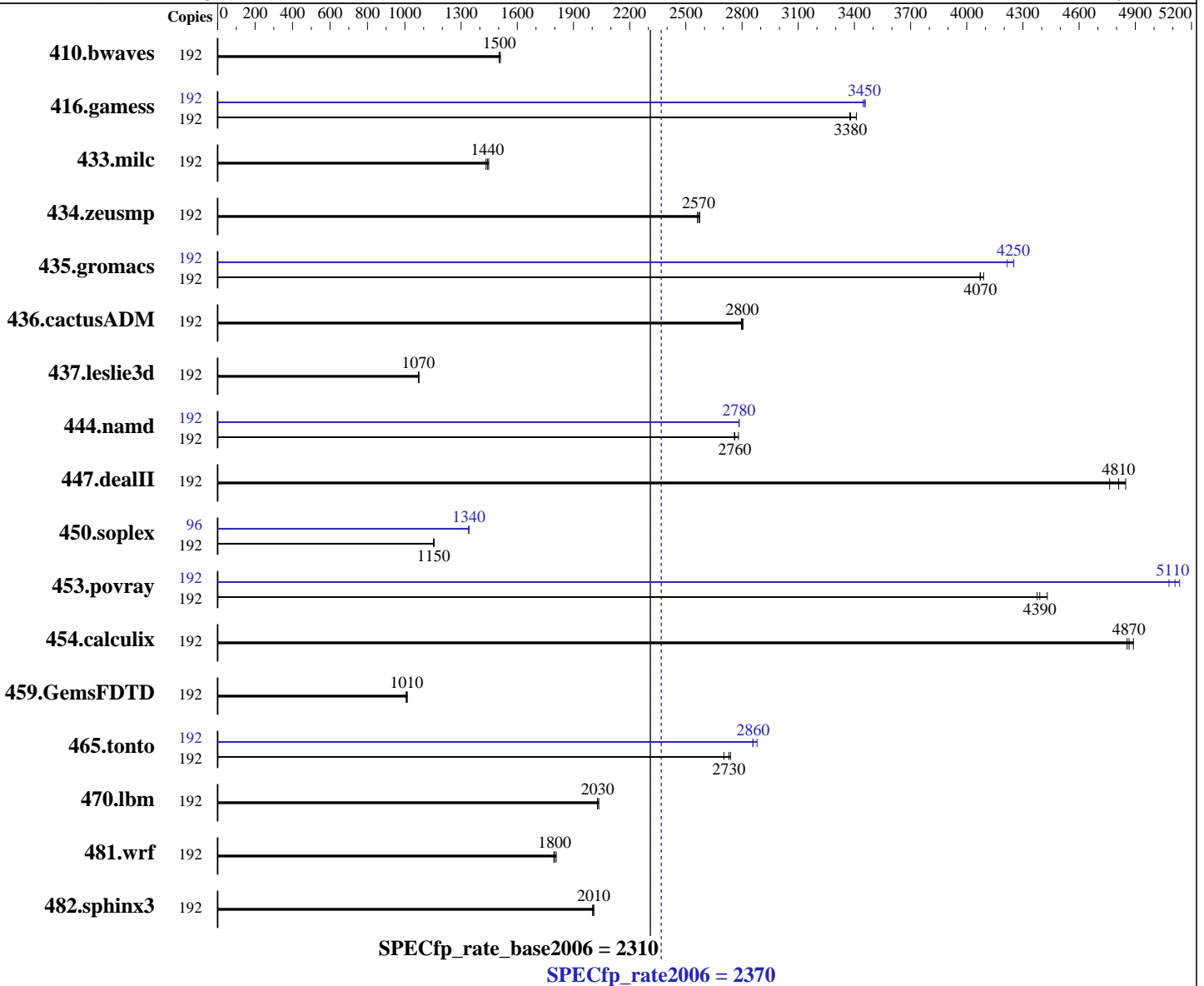
Test date: May-2016

Test sponsor: Sugon

Hardware Availability: May-2016

Tested by: Sugon

Software Availability: May-2016



Hardware

CPU Name: Intel Xeon E7-8890 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 96 cores, 4 chips, 24 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 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: NeoKylin Linux Advanced Server release V7Update2 (Potassium) 3.10.0-327.el7.x86_64
 Compiler: C/C++: Version 16.0.2.181 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.2.181 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: tmpfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

Test date: May-2016

Test sponsor: Sugon

Hardware Availability: May-2016

Tested by: Sugon

Software Availability: May-2016

L3 Cache: 60 MB I+D on chip per chip
 Other Cache: None
 Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
 Disk Subsystem: 2 x 1 TB, RAID 1
 Other Hardware: None

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	192	1735	1500	1728	1510	1736	1500	192	1735	1500	1728	1510	1736	1500
416.gamess	192	1102	3410	1112	3380	1114	3380	192	1087	3460	1089	3450	1091	3450
433.milc	192	1218	1450	1230	1430	1223	1440	192	1218	1450	1230	1430	1223	1440
434.zeusmp	192	679	2570	682	2560	680	2570	192	679	2570	682	2560	680	2570
435.gromacs	192	337	4070	337	4070	335	4090	192	322	4250	325	4220	323	4250
436.cactusADM	192	819	2800	818	2810	820	2800	192	819	2800	818	2810	820	2800
437.leslie3d	192	1684	1070	1683	1070	1678	1080	192	1684	1070	1683	1070	1678	1080
444.namd	192	554	2780	558	2760	558	2760	192	553	2780	553	2780	553	2780
447.dealII	192	453	4850	461	4760	457	4810	192	453	4850	461	4760	457	4810
450.soplex	192	1385	1160	1389	1150	1389	1150	96	596	1340	597	1340	598	1340
453.povray	192	231	4430	233	4390	233	4380	192	200	5110	201	5080	199	5140
454.calculix	192	324	4890	325	4870	326	4860	192	324	4890	325	4870	326	4860
459.GemsFDTD	192	2016	1010	2024	1010	2012	1010	192	2016	1010	2024	1010	2012	1010
465.tonto	192	699	2700	690	2740	692	2730	192	661	2860	656	2880	661	2860
470.lbm	192	1300	2030	1300	2030	1296	2040	192	1300	2030	1300	2030	1296	2040
481.wrf	192	1192	1800	1195	1800	1186	1810	192	1192	1800	1195	1800	1186	1810
482.sphinx3	192	1870	2000	1863	2010	1864	2010	192	1870	2000	1863	2010	1864	2010

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"
 Package C State limit set as "C0/C1 state"
 Enhanced Halt State (C1E) set as "Disable"
 Energy Performance BIAS setting. set as "Performance"
 ACPI T-States set as "Disable"



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

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

Test date: May-2016
Hardware Availability: May-2016
Software Availability: May-2016

Platform Notes

Sysinfo program /cpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb8667b5a285932ceab81e28219e1
running on I840G25 Fri May 6 19:32:16 2016

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 E7-8890 v4 @ 2.20GHz
 4 "physical id"s (chips)
 192 "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 : 24
siblings : 48
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
cache size : 30720 KB
```

From /proc/meminfo

```
MemTotal: 1056727052 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/usr/bin/lsb_release -d

```
NeoKylin Linux Advanced Server release V7Update2 (Potassium)
```

From /etc/*release* /etc/*version*

```
neokylin-release: NeoKylin Linux Advanced Server release V7Update2
(Potassium)
os-release:
NAME="NeoKylin Linux Advanced Server"
VERSION="V7Update2 (Potassium)"
ID="neokylin"
ID_LIKE="fedora"
VERSION_ID="V7Update2"
PRETTY_NAME="NeoKylin Linux Advanced Server V7Update2 (Potassium)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:neokylin:enterprise_linux:V7Update2:GA:server"
system-release: NeoKylin Linux Advanced Server release V7Update2 (Potassium)
system-release-cpe: cpe:/o:neokylin:enterprise_linux:v7update2:ga:server
```

uname -a:

```
Linux I840G25 3.10.0-327.el7.x86_64 #1 SMP Thu Nov 26 13:46:27 CST 2015
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: May-2016

Hardware Availability: May-2016

Software Availability: May-2016

Platform Notes (Continued)

x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 6 19:04

SPEC is set to: /cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
tmpfs	tmpfs	2.0T	3.2G	2.0T	1%	/cpu2006

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. 3.0 05/02/2016

Memory:

64x Hynix HMA42GR7MFR4N-TFTD 16 GB 2 rank 2133 MHz, configured at 1600 MHz
32x NO DIMM NO DIMM

(End of data from sysinfo program)

General Notes

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

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

Binaries compiled on a system with 1x Intel Core i7-4790K CPU + 32GB memory using RedHat EL 7.2 glibc 2.17

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/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



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: May-2016

Hardware Availability: May-2016

Software Availability: May-2016

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
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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

```

Fortran benchmarks:

```

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

```

Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

```

Peak Compiler Invocation

C benchmarks:

```

icc -m64

```

C++ benchmarks (except as noted below):

```

icpc -m64

```

```

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016.2.181/linux/compiler/lib/ia32_lin

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

Test date: May-2016

Test sponsor: Sugon

Hardware Availability: May-2016

Tested by: Sugon

Software Availability: May-2016

Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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
 450.soplex: -D_FILE_OFFSET_BITS=64
 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

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
 -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

Test date: May-2016

Test sponsor: Sugon

Hardware Availability: May-2016

Tested by: Sugon

Software Availability: May-2016

Peak Optimization Flags (Continued)

450.soplex: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -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: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-BDW-revB.xml>



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Sugon

SPECfp_rate2006 = 2370

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECfp_rate_base2006 = 2310

CPU2006 license: 9046

Test sponsor: Sugon

Tested by: Sugon

Test date: May-2016

Hardware Availability: May-2016

Software Availability: May-2016

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 Thu Jun 30 13:53:27 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 June 2016.