## SPEC® CFP2006 Result

### Sugon

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

**SPECfp®_rate2006 = 791**

**SPECfp_rate_base2006 = 767**

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

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<tr>
<td>482.sphinx3</td>
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</table>

### 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  

### Software

- **Operating System:** Red Hat Enterprise Linux Server release 6.5 (Santiago)  
- **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  
- **File System:** ext4  
- **Auto Parallel:** No
Sugon

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

SPEC CFP2006 Result

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</table>

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"

Platform Notes

BIOS Configuration:
Enforce POR set to disabled
DDR Speed set to 2133

Continued on next page
SPEC CFP2006 Result

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

SPECfp_rate2006 = 791
SPECfp_rate_base2006 = 767

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

Test date: Oct-2014
Hardware Availability: Sep-2014
Software Availability: Nov-2013

Platform Notes (Continued)

Early Snoop set to disabled
COD set to enable
Power Technology set to performance
Sysinfo program /home/cpu2006/config/sysinfo.rev6874
$Rev: 6874 $ $Date:: 2013-11-20 #$ 654bd3fcf53b06faef0efe54ed011998

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
cautions.)
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 : 15360 KB

From /proc/meminfo
MemTotal:       264476860 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)

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 8 03:55

SPEC is set to: /home/cpu2006
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      ext4 1.8T  458G  1.3T  27% /

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.

Continued on next page
Sugon

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

**SPECfp_rate2006 = 791**

**SPECfp_rate_base2006 = 767**

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<td>Hardware Availability: Sep-2014</td>
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<td>Tested by: Sugon</td>
<td>Software Availability: Nov-2013</td>
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**Platform Notes (Continued)**

- 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)

**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>

Submitted_by: Tian Yuwan <tianyw@sugon.com>
Submitted: Thu Nov  6 22:40:08 EST 2014
Submission: cpu2006-20141106-32770.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>
Submitted: Wed Nov 26 05:11:52 EST 2014
Submission: cpu2006-20141106-32770.sub

Submitted_by: Tian Yuwan <tianyw@sugon.com>
Submitted: Thu Nov 27 00:57:34 EST 2014
Submission: cpu2006-20141106-32770.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
Sugon
Sugon I620-G20 (Intel Xeon E5-2680 v3)

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SPECfp_rate_base2006 = 767

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

Test date: Oct-2014
Hardware Availability: Sep-2014
Software Availability: Nov-2013

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

Continued on next page
Sugon

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

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**CPU2006 license:** 9046

**Test sponsor:** Sugon

**Test date:** Oct-2014

**Tested by:** Sugon

**Hardware Availability:** Sep-2014

**Software Availability:** Nov-2013

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**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
- 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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -03(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: basepeak = yes
```

**C++ benchmarks:**

```
444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -03(pass 2) -no-prec-div(pass 2)
          -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
          -auto-ilp32
```
SPEC CFP2006 Result

Sugon

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

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CPU2006 license: 9046
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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2)
-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(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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: -xCORE-AVX2 -ipo -03 -no-prec-div -auto-ilp32

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

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-HSW-revA.20141203.xml
# SPEC CFP2006 Result

**Sugon**

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

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**CPU2006 license:** 9046  
**Test sponsor:** Sugon  
**Tested by:** Sugon  
**Test date:** Oct-2014  
**Hardware Availability:** Sep-2014  
**Software Availability:** Nov-2013  

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

Tested with SPEC CPU2006 v1.2.  
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