



# SPEC® CINT2006 Result

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## Sugon

**SPECint®2006 = 50.4**

Sugon I620-G20 (Intel Xeon E5-2630 v3)

**SPECint\_base2006 = 48.2**

CPU2006 license: 9046

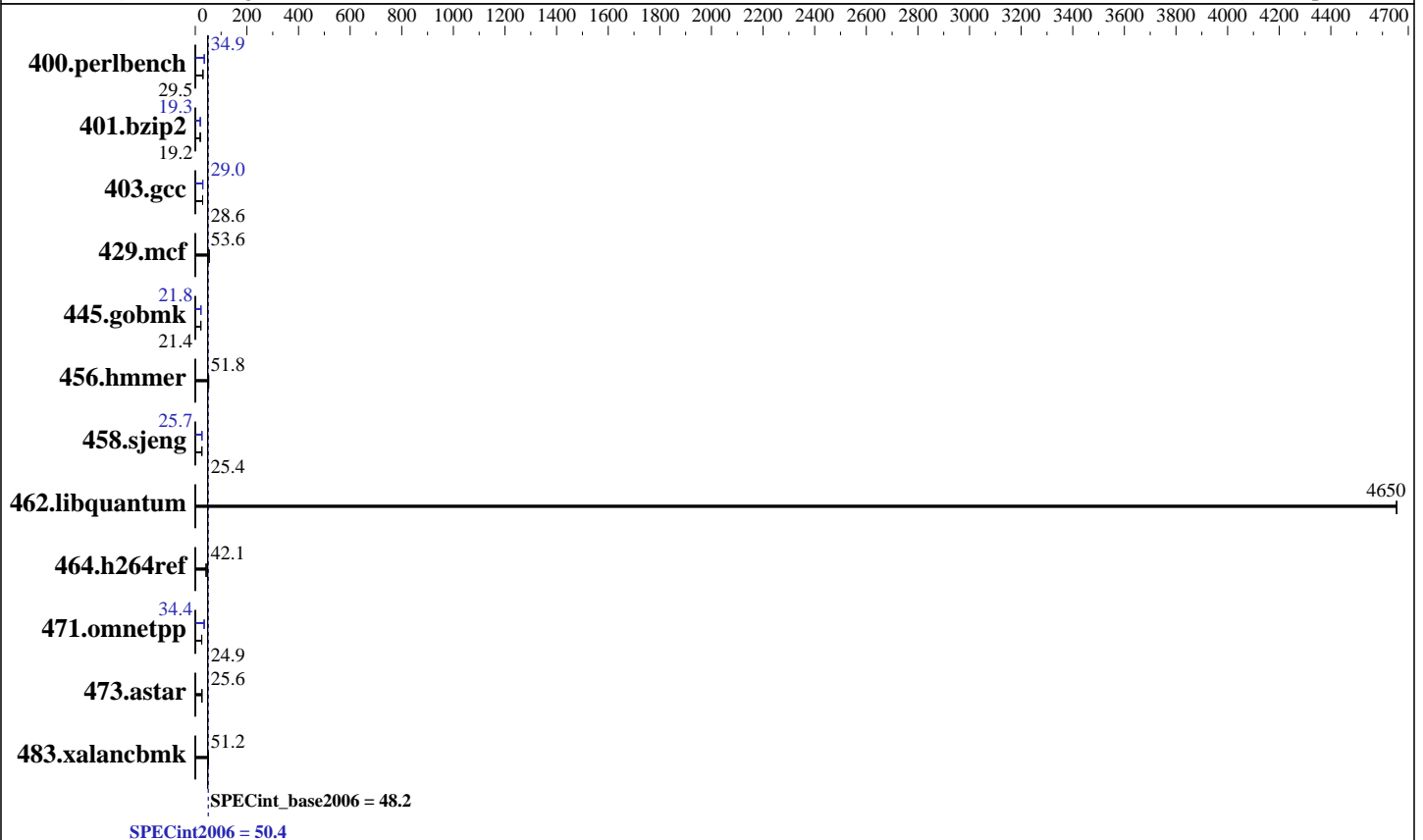
Test date: Sep-2014

Test sponsor: Sugon

Hardware Availability: Sep-2014

Tested by: Sugon

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2630 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 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  
 L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)  
 Disk Subsystem: 1 x 2.0 TB SATA 7200 RPM  
 Other Hardware: None

### 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  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	330	29.6	331	29.5	<b><u>331</u></b>	<b><u>29.5</u></b>	280	34.9	280	34.9	<b><u>280</u></b>	<b><u>34.9</u></b>
401.bzip2	<b><u>503</u></b>	<b><u>19.2</u></b>	503	19.2	503	19.2	499	19.3	498	19.4	<b><u>499</u></b>	<b><u>19.3</u></b>
403.gcc	<b><u>281</u></b>	<b><u>28.6</u></b>	283	28.5	281	28.6	277	29.1	277	29.0	<b><u>277</u></b>	<b><u>29.0</u></b>
429.mcf	172	53.1	<b><u>170</u></b>	<b><u>53.6</u></b>	170	53.8	172	53.1	<b><u>170</u></b>	<b><u>53.6</u></b>	170	53.8
445.gobmk	490	21.4	489	21.4	<b><u>489</u></b>	<b><u>21.4</u></b>	482	21.8	<b><u>482</u></b>	<b><u>21.8</u></b>	482	21.8
456.hammer	180	51.8	<b><u>180</u></b>	<b><u>51.8</u></b>	181	51.6	180	51.8	<b><u>180</u></b>	<b><u>51.8</u></b>	181	51.6
458.sjeng	<b><u>477</u></b>	<b><u>25.4</u></b>	476	25.4	478	25.3	472	25.7	<b><u>471</u></b>	<b><u>25.7</u></b>	471	25.7
462.libquantum	4.45	4660	4.45	4650	<b><u>4.45</u></b>	<b><u>4650</u></b>	4.45	4660	4.45	4650	<b><u>4.45</u></b>	<b><u>4650</u></b>
464.h264ref	525	42.1	528	41.9	<b><u>526</u></b>	<b><u>42.1</u></b>	525	42.1	528	41.9	<b><u>526</u></b>	<b><u>42.1</u></b>
471.omnetpp	<b><u>251</u></b>	<b><u>24.9</u></b>	255	24.5	249	25.1	<b><u>181</u></b>	<b><u>34.4</u></b>	181	34.4	182	34.3
473.astar	<b><u>275</u></b>	<b><u>25.6</u></b>	275	25.6	273	25.7	<b><u>275</u></b>	<b><u>25.6</u></b>	275	25.6	273	25.7
483.xalancbmk	135	51.3	135	51.2	<b><u>135</u></b>	<b><u>51.2</u></b>	135	51.3	135	51.2	<b><u>135</u></b>	<b><u>51.2</u></b>

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

## Submit Notes

The config file option 'submit' was used.

## Operating System Notes

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

## Platform Notes

BIOS Configuration:

Enforce POR set to Enable  
Early Snoop set to disabled  
COD 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 Fri Sep 19 10:03:28 2014

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 E5-2630 v3 @ 2.40GHz
2 "physical id"s (chips)
32 "processors"
```

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with

Continued on next page



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## Platform Notes (Continued)

```
caution.)
cpu cores : 8
siblings  : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      264480068 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 localhost 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 Sep 19 09:15
```

```
SPEC is set to: /home/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda3       ext4      1.8T      411G  1.3T   24% /
```

```
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 1866 MHz 2 rank
```

(End of data from sysinfo program)

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "16"
```

```
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.:
```

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## General Notes (Continued)

numactl --interleave=all runspec <etc>

Submitted\_by: Tian Yuwan <tianyw@sugon.com>  
Submitted: Wed Nov 5 04:16:18 EST 2014  
Submission: cpu2006-20141105-32760.sub

Submitted\_by: Tian Yuwan <tianyw@sugon.com>  
Submitted: Sun Nov 23 21:26:15 EST 2014  
Submission: cpu2006-20141105-32760.sub

Submitted\_by: Tian Yuwan <tianyw@sugon.com>  
Submitted: Wed Nov 26 05:11:52 EST 2014  
Submission: cpu2006-20141105-32760.sub

Submitted\_by: Tian Yuwan <tianyw@sugon.com>  
Submitted: Thu Nov 27 00:57:34 EST 2014  
Submission: cpu2006-20141105-32760.sub

## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
471.omnetpp: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

471.omnetpp: icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

464.h264ref: -DSPEC\_CPU\_LP64

473.astar: -DSPEC\_CPU\_LP64

483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

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http://www.spec.org/



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## Peak Optimization Flags (Continued)

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32  
-opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

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>



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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 questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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