# SPEC® CINT2006 Result

## Sugon

**I980-G10 (Intel Xeon E7-8857 v2, 3.0 GHz)**

<table>
<thead>
<tr>
<th>Test sponsor:</th>
<th>Sugon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by:</td>
<td>Sugon</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9046  
**Test date:** Feb-2014  
**Software Availability:** Jan-2014

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E7-8857 v2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.60 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3000</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>96 cores, 8 chips, 12 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>2,4,6,8 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>30 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>1 TB (128 x 8 GB 2Rx4 PC3-1600R-13, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>3 x 480 GB SAS 10K RPM, RAID 0</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>SUSE Linux Enterprise Server 11 SP3 (x86_64) 3.0.76-0.11-default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>CIC++ Version 14.0.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>ext3</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (Full multiuser with network)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>

**SPECint® rate2006 = 3190**  
**SPECint_rate_base2006 = 3100**

### Score Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>2540</td>
</tr>
<tr>
<td>bzip2</td>
<td>3150</td>
</tr>
<tr>
<td>gcc</td>
<td>2300</td>
</tr>
<tr>
<td>mcf</td>
<td>4490</td>
</tr>
<tr>
<td>gobmk</td>
<td>2180</td>
</tr>
<tr>
<td>hammer</td>
<td>4820</td>
</tr>
<tr>
<td>sjeng</td>
<td>2380</td>
</tr>
<tr>
<td>libquantum</td>
<td>4650</td>
</tr>
<tr>
<td>h264ref</td>
<td>4790</td>
</tr>
<tr>
<td>omnetpp</td>
<td>1440</td>
</tr>
<tr>
<td>astart</td>
<td>1420</td>
</tr>
<tr>
<td>xalancbmk</td>
<td>3470</td>
</tr>
</tbody>
</table>

**SPECint_rate_base2006 = 3100**

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info@spec.org  
http://www.spec.org/
SPEC CINT2006 Result

Sugon

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SPECint_rate_base2006 = 3100

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

Test date: Feb-2014
Hardware Availability: Feb-2014
Software Availability: Jan-2014

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>96</td>
<td>391</td>
<td>401</td>
<td>2300</td>
<td>2350</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>96</td>
<td>575</td>
<td>574</td>
<td>1600</td>
<td>1610</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.mcf</td>
<td>96</td>
<td>195</td>
<td>195</td>
<td>4500</td>
<td>4490</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>96</td>
<td>464</td>
<td>467</td>
<td>2170</td>
<td>2160</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>456.hmmer</td>
<td>96</td>
<td>198</td>
<td>200</td>
<td>4500</td>
<td>4490</td>
<td>3190</td>
<td>3100</td>
<td></td>
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</tr>
<tr>
<td>458.sjeng</td>
<td>96</td>
<td>504</td>
<td>507</td>
<td>2280</td>
<td>2290</td>
<td>3190</td>
<td>3100</td>
<td></td>
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</tr>
<tr>
<td>462.libquantum</td>
<td>96</td>
<td>88.8</td>
<td>88.6</td>
<td>22500</td>
<td>22500</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>96</td>
<td>457</td>
<td>457</td>
<td>4650</td>
<td>4630</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>96</td>
<td>422</td>
<td>423</td>
<td>1420</td>
<td>1420</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>96</td>
<td>390</td>
<td>388</td>
<td>1740</td>
<td>1740</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>96</td>
<td>191</td>
<td>191</td>
<td>3470</td>
<td>3470</td>
<td>3190</td>
<td>3100</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</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

Sysinfo program /home/cpu2006/config/sysinfo.rev6874
$Rev: 6874 $ $Date:: 2013-11-20 #$ 654bd3fcf53b06faef0efe54ed011998
running on I980-G10 Sun Jun 30 17:09:46 2013

The system date is incorrect, the actual date is: Feb 13 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 E7-8857 v2 @ 3.00GHz
8 "physical id"s (chips)
96 "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 : 12

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Platform Notes (Continued)

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
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 4: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 5: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 6: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 7: cores 0 1 2 3 4 5 8 9 10 11 12 13

cache size : 30720 KB

From /proc/meminfo
MemTotal: 1058725480 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3

uname -a:
Linux I980-G10 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
(ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 30 17:07 last=S

SPEC is set to: /home/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext3 788G 9.3G 739G 2% /

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. 5.6.5 01/07/2014
Memory:
128x Hynix HMT41GR7AFR4A-PB 8 GB 1600 MHz, configured at 1333 MHz
64x 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

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## General Notes (Continued)

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
    numactl --interleave=all runspec <etc>
```

## Base Compiler Invocation

### C benchmarks:
- `icc  -m32`

### C++ benchmarks:
- `icpc  -m32`

## Base Portability Flags

- `400.perlb benchmark: -DSPEC_CPU_LINUX_IA32`
- `462.libquantum: -DSPEC_CPU_LINUX`
- `483.xalancbmk: -DSPEC_CPU_LINUX`

## Base Optimization Flags

### C benchmarks:
- `-xSSE4.2  -ipo  -O3  -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

### C++ benchmarks:
- `-xSSE4.2  -ipo  -O3  -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`
- `-Wl,-z,muldefs -L/sh -lsmartheap`

## Base Other Flags

### C benchmarks:
- `403.gcc: -Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
- `icc  -m32`

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Peak Compiler Invocation (Continued)

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xSSE4.2 -ipo -03 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -03 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32

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SPEC CINT2006 Result

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref:
-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp:
-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -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-linux64.20140128.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

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

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