Sugon

Sugon I840-G20 (Intel Xeon E7-8890 v3)

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>SPECint_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.0</td>
<td>62.9</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9046  
**Test sponsor:** Sugon  
**Tested by:** Sugon  
**Test date:** Nov-2015  
**Hardware Availability:** Sep-2015  
**Software Availability:** Sep-2015

### Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E7-8890 v3</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2500</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>72 cores, 4 chips, 18 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>21/4E4 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>45 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>4 x 250 GB SATA, RAID10</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 12 (x86_64) 3.12.28-4-default</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.2</td>
</tr>
</tbody>
</table>
SPEC CINT2006 Result

Sugon

Sugon I840-G20 (Intel Xeon E7-8890 v3)

SPECint2006 = 65.0
SPECint_base2006 = 62.9

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

Test date: Nov-2015
Hardware Availability: Sep-2015
Software Availability: Sep-2015

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</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>258</td>
<td>37.9</td>
<td>257</td>
<td>38.0</td>
<td>262</td>
<td>37.3</td>
<td>241</td>
<td>40.5</td>
<td>242</td>
<td>40.4</td>
<td>241</td>
<td>40.5</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>421</td>
<td>22.9</td>
<td>422</td>
<td>22.9</td>
<td>420</td>
<td>23.0</td>
<td>417</td>
<td>23.1</td>
<td>418</td>
<td>23.1</td>
<td>417</td>
<td>23.1</td>
</tr>
<tr>
<td>403.gcc</td>
<td>235</td>
<td>34.3</td>
<td>234</td>
<td>34.5</td>
<td>235</td>
<td>34.3</td>
<td>233</td>
<td>34.5</td>
<td>234</td>
<td>34.5</td>
<td>233</td>
<td>34.5</td>
</tr>
<tr>
<td>429.mcf</td>
<td>165</td>
<td>55.3</td>
<td>165</td>
<td>55.3</td>
<td>166</td>
<td>54.9</td>
<td>165</td>
<td>55.3</td>
<td>165</td>
<td>55.3</td>
<td>166</td>
<td>54.9</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>376</td>
<td>27.9</td>
<td>376</td>
<td>27.9</td>
<td>376</td>
<td>27.9</td>
<td>376</td>
<td>27.9</td>
<td>376</td>
<td>27.9</td>
<td>376</td>
<td>27.9</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>142</td>
<td>65.5</td>
<td>142</td>
<td>65.6</td>
<td>142</td>
<td>65.7</td>
<td>142</td>
<td>65.5</td>
<td>142</td>
<td>65.6</td>
<td>142</td>
<td>65.7</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>379</td>
<td>31.9</td>
<td>378</td>
<td>32.0</td>
<td>378</td>
<td>32.0</td>
<td>374</td>
<td>32.4</td>
<td>374</td>
<td>32.4</td>
<td>374</td>
<td>32.4</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>2.59</td>
<td>8010</td>
<td>2.53</td>
<td>8190</td>
<td>2.67</td>
<td>7750</td>
<td>2.59</td>
<td>8010</td>
<td>2.53</td>
<td>8190</td>
<td>2.67</td>
<td>7750</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>414</td>
<td>53.4</td>
<td>414</td>
<td>53.5</td>
<td>414</td>
<td>53.4</td>
<td>414</td>
<td>53.4</td>
<td>414</td>
<td>53.5</td>
<td>414</td>
<td>53.4</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>137</td>
<td>45.6</td>
<td>136</td>
<td>45.9</td>
<td>137</td>
<td>45.5</td>
<td>119</td>
<td>52.7</td>
<td>119</td>
<td>52.6</td>
<td>119</td>
<td>52.7</td>
</tr>
<tr>
<td>473.astar</td>
<td>227</td>
<td>30.9</td>
<td>228</td>
<td>30.8</td>
<td>227</td>
<td>30.9</td>
<td>227</td>
<td>30.9</td>
<td>228</td>
<td>30.8</td>
<td>227</td>
<td>30.9</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>103</td>
<td>67.0</td>
<td>104</td>
<td>66.6</td>
<td>107</td>
<td>64.3</td>
<td>89.9</td>
<td>76.7</td>
<td>90.2</td>
<td>76.5</td>
<td>89.9</td>
<td>76.7</td>
</tr>
</tbody>
</table>

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:
Set Power Technology to Custom
Set Package C State limit C0/C1 state
Set DDR speed to 1600 MHz
Set Hyper-Threading to Disabled
Baseboard Management Controller used to adjust the fan speed to performance mode
Sysinfo program /home/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost Thu Nov 26 18:03:30 2015

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 v3 @ 2.50GHz
4 "physical id"s (chips)
72 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
SPEC CINT2006 Result

Sugon

Sugon I840-G20 (Intel Xeon E7-8890 v3)

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>65.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>62.9</td>
</tr>
</tbody>
</table>

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

Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores : 18
siblings : 18
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
```
cache size : 46080 KB

From /proc/meminfo
```
MemTotal:       529311968 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12
```

From /etc/*release* /etc/*version*
```
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 0
# This file is deprecated and will be removed in a future service pack or release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12"
VERSION_ID="12"
PRETTY_NAME="SUSE Linux Enterprise Server 12"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12"
```

uname -a:
```
Linux localhost 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux
```
run-level 3 Nov 26 18:02 last=5

SPEC is set to: /home/cpu2006
```
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 875G 303G 572G 35% /home
```

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. 1.01 08/26/2015
Continued on next page
SPEC CINT2006 Result

Sugon
Sugon I840-G20 (Intel Xeon E7-8890 v3)

SPECint2006 = 65.0
SPECint_base2006 = 62.9

CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon
Test date: Nov-2015
Hardware Availability: Sep-2015
Software Availability: Sep-2015

Platform Notes (Continued)

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

(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 = "72"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

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

Continued on next page
Sugon
Sugon I840-G20 (Intel Xeon E7-8890 v3)

SPECint2006 = 65.0
SPECint_base2006 = 62.9

CPU2006 license: 9046
Test sponsor: Sugon
Test date: Nov-2015
Tested by: Sugon
Hardware Availability: Sep-2015
Software Availability: Sep-2015

Base Optimization Flags (Continued)

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/home/cpu2006/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 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
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 -DSPEC_CPU_LINUX
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

Continued on next page
**Peak Optimization Flags (Continued)**

400.perlbench: 
-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)  
-opt-prefetch  
-ansi-alias  

401.bzip2:  
-xCORE-AVX2 (pass 2)  
-prof-gen:threadsafe (pass 1)  
-ipo (pass 2)  
-O3 (pass 2)  
-no-prec-div  
-par-num-threads=1 (pass 1)  
-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: basepeak = yes  

456.hmmer: basepeak = yes  

458.sjeng: 
-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  

462.libquantum: basepeak = yes  

464.h264ref: basepeak = yes  

C++ benchmarks:

471.omnetpp: 
-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)  
-opt-ra-region-strategy=block  
-ansi-alias  
-Wl,-z,muldefs -L/home/cpu2006/sh -lsmartheap  

473.astar: basepeak = yes  

483.xalancbmk: 
-xCORE-AVX2  
-ipo -O3 -no-prec-div -opt-prefetch  
-ansi-alias  
-Wl,-z,muldefs -L/home/cpu2006/sh -lsmartheap  

**Peak Other Flags**

C benchmarks:

403.gcc: -Dalloca=_alloca
## SPEC CINT2006 Result

### Sugon

**Sugon I840-G20 (Intel Xeon E7-8890 v3)**

| SPECint2006 | 65.0 |
| SPECint_base2006 | 62.9 |

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

**Test date:** Nov-2015  
**Hardware Availability:** Sep-2015  
**Software Availability:** Sep-2015

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-revB.xml](http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-HSW-revB.xml)

---

SPEC and SPECint 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.  
Originally published on 15 December 2015.