Sugon TC4600E/CB50-G20 (Intel Xeon E5-2637 v4)

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

SPECint®2006 = 68.0
SPECint_base2006 = 65.0

Hardware

CPU Name: Intel Xeon E5-2637 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3500
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 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: 15 MB I+D on chip per core
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 2 x SATA, 300 GB, RAID 0
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo) 3.10.0-327.el7.x86_64
Compiler: C/C++: Version 16.0.0.101 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 V10.2
SUGON

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CPU2006 license: 9046
Test sponsor: Sugon
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Test date: Oct-2016
Hardware Availability: May-2016
Software Availability: Mar-2016

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>226</td>
<td>43.2</td>
<td>227</td>
<td>43.0</td>
<td>231</td>
<td>42.2</td>
<td>209</td>
<td>46.8</td>
<td>207</td>
<td>47.1</td>
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<tr>
<td>401.bzip2</td>
<td>362</td>
<td>26.7</td>
<td>361</td>
<td>26.7</td>
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<td>26.8</td>
<td>356</td>
<td>27.1</td>
<td>355</td>
<td>27.2</td>
</tr>
<tr>
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<td>213</td>
<td>37.8</td>
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<td>213</td>
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<td>37.9</td>
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<tr>
<td>429.mcf</td>
<td>133</td>
<td>68.8</td>
<td>133</td>
<td>68.7</td>
<td>132</td>
<td>69.1</td>
<td>131</td>
<td>69.5</td>
<td>131</td>
<td>69.8</td>
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<tr>
<td>445.gobmk</td>
<td>337</td>
<td>31.1</td>
<td>336</td>
<td>31.2</td>
<td>337</td>
<td>31.1</td>
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<td>36.0</td>
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<td>5.31</td>
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<td>3850</td>
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<td>3910</td>
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<td>347</td>
<td>63.7</td>
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<td>63.8</td>
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<td>63.5</td>
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<tr>
<td>471.omnetpp</td>
<td>237</td>
<td>26.4</td>
<td>235</td>
<td>26.6</td>
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<td>26.6</td>
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<td>73.6</td>
<td>80.8</td>
<td>85.4</td>
<td>81.2</td>
<td>85.0</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

This System is electrically equal to TC6600/CB50-G20
Sysinfo program /benchmarks/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on c1302 Tue Oct 25 18:18:21 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 E5-2637 v4 @ 3.50GHz
  2 "physical id"s (chips)
  16 "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 : 4
siblings : 8
physical 0: cores 0 1 2 3

Continued on next page
SPEC CINT2006 Result

Sugon

Sugon TC4600E/CB50-G20 (Intel Xeon E5-2637 v4)

| SPECint2006 = | 68.0 |
| SPECint_base2006 = | 65.0 |

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

| Test date: | Oct-2016 |
| Hardware Availability: | May-2016 |
| Software Availability: | Mar-2016 |

Platform Notes (Continued)

physical 1: cores 0 1 2 3
cache size : 15360 KB

From /proc/meminfo
MemTotal: 131925028 kB
 HugePages_Total: 0
 Hugepagesize: 2048 kB

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

os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:
Linux c1302 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64
x86_64 x86_64 GNU/Linux
run-level 3 Oct 8 16:35

SPEC is set to: /benchmarks/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 544G 85G 432G 17% /

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. 5.11 05/18/2016
Memory:
8x NO DIMM NO DIMM
8x Samsung M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz

(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 = "/benchmarks/cpu2006/libs/32:/benchmarks/cpu2006/libs/64:/benchmarks/cpu2006/sh"
OMP_NUM_THREADS = "8"

Continued on next page
**SPEC CINT2006 Result**

**Sugon**

Sugon TC4600E/CB50-G20 (Intel Xeon E5-2637 v4)

**SPECint2006 = 68.0**  
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**CPU2006 license:** 9046  
**Test date:** Oct-2016  
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**Hardware Availability:** May-2016  
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**General Notes (Continued)**

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**

C benchmarks:
```
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
```

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
```
Sugon

Sugon TC4600E/CB50-G20 (Intel Xeon E5-2637 v4)

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SPECint2006 = 68.0
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Test date: Oct-2016
Hardware Availability: May-2016
Software Availability: Mar-2016

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
445.gobmk: 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
    473.astar: icpc -m64

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: -D_FILE_OFFSET_BITS=64
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: -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:
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: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
    -opt-prefetch -auto-p32

Continued on next page
Sugon

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CPU2006 license: 9046
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Peak Optimization Flags (Continued)

445.gobmk:
-xCORE-AVX2(pass 2)
-prof-gen:threadsafepass 1
-prof-use(pass 2)
-par-num-threads=1(pass 1)
-ansi-alias

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/sh -lsmartheap

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

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

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-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
Sugon

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