## SPEC® CINT2006 Result

### Acer Incorporated
Altos R380 F4 (Intel Xeon Gold 6136)

<table>
<thead>
<tr>
<th>SPECint®_rate2006</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>1480</td>
<td>1410</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated  
**Test date:** Sep-2017  
**Hardware Availability:** Oct-2017  
**Software Availability:** Apr-2017

### Hardware

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon Gold 6136</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.70 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>24 cores, 2 chips, 12 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chips</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>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>24.75 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>384 GB (12 x 32 GB 2Rx4 PC4-2666V-R)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 1000 GB SATA, 7200 RPM</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>btrfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</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 V10.2</td>
</tr>
</tbody>
</table>
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SPECint_rate_base2006 = 1410

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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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>48</td>
<td>454.030</td>
<td>456.030</td>
<td><strong>455.1030</strong></td>
<td>48</td>
<td>385.1220</td>
<td><strong>385.1220</strong></td>
<td>383.1220</td>
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<td></td>
<td></td>
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<tr>
<td>403.gcc</td>
<td>48</td>
<td>373.1040</td>
<td><strong>373.1040</strong></td>
<td>375.1030</td>
<td>48</td>
<td>375.1030</td>
<td>372.1040</td>
<td>374.1030</td>
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</tr>
<tr>
<td>429.mcf</td>
<td>48</td>
<td><strong>231.1890</strong></td>
<td>231.1890</td>
<td>232.1880</td>
<td>48</td>
<td><strong>231.1890</strong></td>
<td>231.1890</td>
<td>232.1880</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>48</td>
<td>576.873</td>
<td><strong>576.874</strong></td>
<td>576.874</td>
<td>48</td>
<td><strong>578.872</strong></td>
<td>578.872</td>
<td>578.872</td>
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<tr>
<td>456.hmmer</td>
<td>48</td>
<td>228.1960</td>
<td>229.1950</td>
<td><strong>228.1960</strong></td>
<td>48</td>
<td>182.2460</td>
<td><strong>182.2460</strong></td>
<td>183.2450</td>
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<tr>
<td>458.sjeng</td>
<td>48</td>
<td><strong>627.927</strong></td>
<td>628.925</td>
<td>626.928</td>
<td>48</td>
<td>584.995</td>
<td>583.997</td>
<td>583.996</td>
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<tr>
<td>462.libquantum</td>
<td>48</td>
<td>43.123100</td>
<td>43.323000</td>
<td><strong>43.223000</strong></td>
<td>48</td>
<td>43.123100</td>
<td>43.323000</td>
<td><strong>43.223000</strong></td>
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<td></td>
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</tr>
<tr>
<td>464.h264ref</td>
<td>48</td>
<td>669.1590</td>
<td>677.1570</td>
<td><strong>674.1580</strong></td>
<td>48</td>
<td><strong>657.1620</strong></td>
<td>653.1630</td>
<td>657.1620</td>
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</tr>
<tr>
<td>471.omnetpp</td>
<td>48</td>
<td>450.667</td>
<td><strong>450.666</strong></td>
<td>452.664</td>
<td>48</td>
<td>414.725</td>
<td><strong>415.723</strong></td>
<td>415.723</td>
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<tr>
<td>473.astar</td>
<td>48</td>
<td>429.785</td>
<td><strong>429.785</strong></td>
<td>430.784</td>
<td>48</td>
<td>429.785</td>
<td><strong>429.785</strong></td>
<td>430.784</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>209.1580</td>
<td><strong>208.1590</strong></td>
<td>208.1590</td>
<td>48</td>
<td>209.1580</td>
<td><strong>208.1590</strong></td>
<td>208.1590</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

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:
CPU Power and Performance Policy set to Performance
IMC set to 1-way interleaving
Sub_NUMA Cluster set to enabled
Set Fan Profile set to Performance
Sysinfo program /usr/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-irn9 Tue Sep 12 07:28:16 2017

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) Gold 6136 CPU @ 3.00GHz
2 "physical id"s (chips)
48 "processors"
Acer Incorporated
Altos R380 F4 (Intel Xeon Gold 6136)

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Platform Notes (Continued)
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 : 24
physical 0: cores 0 1 2 3 4 9 10 16 18 19 25 26
physical 1: cores 0 1 4 9 10 11 17 18 24 25 26 27
cache size : 25344 KB

From /proc/meminfo
MemTotal: 394674988 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# 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.

cpe_name="cpe:/o:suse:sles:12:sp2"

uname -a:
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 11 09:17

SPEC is set to: /usr/cpu2006

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 Intel Corporation SE5C620.86B.00.01.0004.071220170215 07/12/2017
Memory:
Continued on next page
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Platform Notes (Continued)

4x Empty/NO DIMM NO DIMM
12x Micron 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/lib/ia32:/usr/cpu2006/lib/intel64:/usr/cpu2006/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
Altos R360 F4 and Altos R380 F4 are electronically equivalent.
This result was measured on Altos R380 F4.

Base Compiler Invocation

C benchmarks:
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
## SPEC CINT2006 Result

### Acer Incorporated

**Altos R380 F4 (Intel Xeon Gold 6136)**

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### Base Optimization Flags

- **C benchmarks:**
  - `-xCORE-AVX512`  
  - `-ipo`  
  - `-no-prec-div`  
  - `-qopt-prefetch`  
  - `-qopt-mem-layout-trans=3`

- **C++ benchmarks:**
  - `-xCORE-AVX512`  
  - `-ipo`  
  - `-no-prec-div`  
  - `-qopt-prefetch`  
  - `-qopt-mem-layout-trans=3`  
  - `-Wl,-z,muldefs`  
  - `-L/sh10.2`  
  - `-lsmartheap`

### Base Other Flags

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

### Peak Compiler Invocation

#### C benchmarks (except as noted below):

```bash
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

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

#### C++ benchmarks:

```bash
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

- `429.mcf`: `-D_FILE_OFFSET_BITS=64`
- `445.gobmk`: `-D_FILE_OFFSET_BITS=64`
- `456.hmmer`: `-DSPEC_CPU_LP64`
- `458.sjeng`: `-DSPEC_CPU_LP64`
- `462.libquantum`: `-D_FILE_OFFSET_BITS=64`  
  - `-DSPEC_CPU_LINUX`
- `464.h264ref`: `-D_FILE_OFFSET_BITS=64`
- `471.omnetpp`: `-D_FILE_OFFSET_BITS=64`
- `473.astar`: `-D_FILE_OFFSET_BITS=64`

### Peak Portability Flags

- `400.perlbench`: `-DSPEC_CPU_LP64`  
  - `-DSPEC_CPU_LINUX_X64`
- `401.bzip2`: `-DSPEC_CPU_LP64`
- `403.gcc`: `-D_FILE_OFFSET_BITS=64`
- `429.mcf`: `-D_FILE_OFFSET_BITS=64`
- `445.gobmk`: `-D_FILE_OFFSET_BITS=64`
- `456.hmmer`: `-DSPEC_CPU_LP64`
- `458.sjeng`: `-DSPEC_CPU_LP64`
- `462.libquantum`: `-D_FILE_OFFSET_BITS=64`  
  - `-DSPEC_CPU_LINUX`
- `464.h264ref`: `-D_FILE_OFFSET_BITS=64`
- `471.omnetpp`: `-D_FILE_OFFSET_BITS=64`
- `473.astar`: `-D_FILE_OFFSET_BITS=64`
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Peak Portability Flags (Continued)
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -auto-ilp32 -qopt-mem-layout-trans=3

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -qopt-prefetch -auto-ilp32
-qopt-mem-layout-trans=3

403.gcc: -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3

429.mcf: basepeak = yes

456.hmmer: -xCORE-AVX512 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-qopt-mem-layout-trans=3

462.libquantum: basepeak = yes

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -qopt-mem-layout-trans=3
-qopt-ra-region-strategy=block
-qopt-mem-layout-trans=3 -Wl,-z,muldefs
-L/sh10.2 -lsmartheap

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Peak Optimization Flags (Continued)

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-ic17.0-official-linux64-revF.html
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revC.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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