Acer Incorporated

Altos R380 F4 (Intel Xeon Gold 6126)

### SPECfp\(_\text{rate2006}\) = 1090

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECfp_rate_base2006</th>
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<tr>
<td>410.bwaves</td>
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<td>416.gamess</td>
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<td>437.leslie3d</td>
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<td>459.GemsFDTD</td>
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<td>470.lbm</td>
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<tr>
<td>481.wrf</td>
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<tr>
<td>482.sphinx3</td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 6126
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz
- **CPU MHz:** 2600
- **FPU:** Integrated
- **CPU(s) enabled:** 24 cores, 2 chips, 12 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1,2 chips
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 1 MB I+D on chip per core

### Software

- **Operating System:** SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default
- **Compiler:** C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux;
  Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux
- **Auto Parallel:** Yes
- **File System:** btrfs
- **System State:** Run level 3 ((multi-user)}
## Acer Incorporated

**Altos R380 F4 (Intel Xeon Gold 6126)**

**SPEClfp_rate2006 = 1090**

**SPECfp_rate_base2006 = 1070**

---

### CPU2006 license: 97

**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated

<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>19.25 MB I+D on chip per chip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Cache:</td>
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<tr>
<td>Memory:</td>
<td>384 GB (12 x 32 GB 2Rx4 PC4-2666V-R)</td>
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<tr>
<td>Disk Subsystem:</td>
<td>1 x 1000 GB SATA, 7200 RPM</td>
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<tr>
<td>Other Hardware:</td>
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| Base Pointers: | 32/64-bit |
| Other Pointers: | 32/64-bit |
| Other Software: | None |

---

### Results Table

<table>
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<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>891</td>
<td>1050</td>
<td>892</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

**BIOS Configuration:**

**CPU Power and Performance Policy set to Performance**

**IMC set to 1-way interleaving**
Acer Incorporated

Altos R380 F4 (Intel Xeon Gold 6126)

SPECfp_rate2006 = 1090
SPECfp_rate_base2006 = 1070

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Platform Notes (Continued)

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 Sat Sep 9 01:58:24 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 6126 CPU @ 2.60GHz
  2 "physical id"s (chips)
  48 "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 : 24
physical 0: cores 0 1 3 4 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 11 12 13
cache size : 19712 KB

From /proc/meminfo
MemTotal: 394675016 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.
os-release:
  NAME="SLES"
  VERSION="12-SP2"
  VERSION_ID="12.2"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp2"

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

Continued on next page
# SPEC CFP2006 Result

## Acer Incorporated

**Altos R380 F4 (Intel Xeon Gold 6126)**

<table>
<thead>
<tr>
<th>SPECfp_rate2006</th>
<th>1090</th>
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<td>SPECfp_rate_base2006</td>
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</tbody>
</table>

**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated

### Platform Notes (Continued)

- **run-level 3 Sep 7 17:10**
- **SPEC is set to:** /usr/cpu2006
- **Filesystem** Type Size Used Avail Use% Mounted on  
  /dev/sda3 btrfs 3.7T 202G 3.5T 6% /

**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:**  
  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.:  
  `numactl --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 -m64`

- **C++ benchmarks:**  
  `icpc -m64`

- **Fortran benchmarks:**  
  `ifort -m64`

- **Benchmarks using both Fortran and C:**  
  `icc -m64 ifort -m64`
### Acer Incorporated

**Altos R380 F4 (Intel Xeon Gold 6126)**

| SPECfp_rate2006 | 1090 |
| SPECfp_rate_base2006 | 1070 |

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

#### Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
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<td>410.bwaves</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>416.games</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>433.milc</td>
<td>-DSPEC_CPU_LP64</td>
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<td>434.zeusmp</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
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<td>436.cactusADM</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>444.namd</td>
<td>-DSPEC_CPU_LP64</td>
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<td>447.dealII</td>
<td>-DSPEC_CPU_LP64</td>
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<td>450.soplex</td>
<td>-DSPEC_CPU_LP64</td>
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<td>453.povray</td>
<td>-DSPEC_CPU_LP64</td>
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<td>-DSPEC_CPU_LP64 -nofor_main</td>
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<tr>
<td>459.GemsFDTD</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>465.tonto</td>
<td>-DSPEC_CPU_LP64</td>
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<td>470.lbm</td>
<td>-DSPEC_CPU_LP64</td>
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<td>481.wrf</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
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<tr>
<td>482.sphinx3</td>
<td>-DSPEC_CPU_LP64</td>
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</table>

#### Base Optimization Flags

**C benchmarks:**

```bash
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

**C++ benchmarks:**

```bash
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

**Fortran benchmarks:**

```bash
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
```

**Benchmarks using both Fortran and C:**

```bash
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

#### Peak Compiler Invocation

**C benchmarks:**

```bash
icc -m64
```

**C++ benchmarks (except as noted below):**

```bash
icpc -m64
```

```bash
450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```
Acer Incorporated
Altos R380 F4 (Intel Xeon Gold 6126)

SPECfp_rate2006 = 1090
SPECfp_rate_base2006 = 1070

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

Peak Compiler Invocation (Continued)

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -D_FILE_OFFSET_BITS=64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:
433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -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) -fno-alias -auto-ilp32 -qopt-mem-layout-trans=3
447.dealII: basepeak = yes
## Spec CFP2006 Result

**Acer Incorporated**

Altos R380 F4 (Intel Xeon Gold 6126)

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<thead>
<tr>
<th>SPECfp_rate2006</th>
<th>SPECfp_rate_base2006</th>
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**CPU2006 license:** 97

**Test sponsor:** Acer Incorporated

**Test date:** Sep-2017

**Hardware Availability:** Oct-2017

**Tested by:** Acer Incorporated

**Software Availability:** Apr-2017

### Peak Optimization Flags (Continued)

450.soplex: 
- `prof-gen(pass 1)`  
- `prof-use(pass 2)`  
- `xCORE-AVX512(pass 2)`  
- `par-num-threads=1(pass 1)`  
- `ipo(pass 2)`  
- `no-prec-div(pass 2)`  
- `qopt-malloc-options=3`  
- `qopt-mem-layout-trans=3`

453.povray: 
- `prof-gen(pass 1)`  
- `prof-use(pass 2)`  
- `xCORE-AVX512(pass 2)`  
- `par-num-threads=1(pass 1)`  
- `ipo(pass 2)`  
- `no-prec-div(pass 2)`  
- `unroll4`  
- `qopt-mem-layout-trans=3`

**Fortran benchmarks:**

410.bwaves: 
- `xCORE-AVX512`  
- `ipo`  
- `O3`  
- `no-prec-div`  
- `qopt-prefetch`

416.gamess: 
- `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)`  
- `unroll4`  
- `inline-level=0`  
- `scalar-rep-`

434.zeusmp: basepeak = yes

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: 
- `prof-gen(pass 1)`  
- `prof-use(pass 2)`  
- `xCORE-AVX512(pass 2)`  
- `par-num-threads=1(pass 1)`  
- `ipo(pass 2)`  
- `O3(pass 2)`  
- `unroll4`  
- `auto`  
- `inline-calloc`  
- `qopt-malloc-options=3`

**Benchmarks using both Fortran and C:**

435.gromacs: 
- `prof-gen(pass 1)`  
- `prof-use(pass 2)`  
- `xCORE-AVX512(pass 2)`  
- `par-num-threads=1(pass 1)`  
- `qopt-prefetch`  
- `auto-ilp32`  
- `qopt-mem-layout-trans=3`

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

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
Acer Incorporated
Altos R380 F4 (Intel Xeon Gold 6126)

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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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