## Acer Incorporated

**Altos R360 F3 (Intel Xeon E5-2620 v3)**

| SPECfp_rate2006 | 243 |
| SPECfp_rate_base2006 | 237 |

**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated  
**Test date:** Nov-2015  
**Hardware Availability:** May-2015  
**Software Availability:** Jul-2014

### Software

- **Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo)  
  3.10.0-123.el7.x86_64  
- **Compiler:**  
  C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux  
  Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux  
- **Auto Parallel:** No  
- **File System:** xfs

### Hardware

- **CPU Name:** Intel Xeon E5-2620 v3  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz  
- **CPU MHz:** 2400  
- **FPU:** Integrated  
- **CPU(s) enabled:** 6 cores, 1 chip, 6 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:** 256 KB I+D on chip per core

### SPECfpu Rate

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>239</td>
</tr>
<tr>
<td>416.gamess</td>
<td>209</td>
</tr>
<tr>
<td>433.milc</td>
<td>232</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>232</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
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<tr>
<td>444.namd</td>
<td>161</td>
</tr>
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<td>447.dealII</td>
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<td>450.soplex</td>
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<tr>
<td>459.GemsFDTD</td>
<td>156</td>
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<tr>
<td>465.tonto</td>
<td>257</td>
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<td>470.lbm</td>
<td>239</td>
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<tr>
<td>481.wrf</td>
<td>282</td>
</tr>
<tr>
<td>482.sphinx3</td>
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</table>

**Continued on next page**
SPEC CFP2006 Result

Acer Incorporated
Altos R360 F3 (Intel Xeon E5-2620 v3)

SPECfp_rate2006 = 243
SPECfp_rate_base2006 = 237

CPU2006 license: 97
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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
Disk Subsystem: 1 x 1000 GB SATA
Other Hardware: None
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<td>223</td>
<td>1052</td>
<td>222</td>
<td>1053</td>
<td>222</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
C1E Autopromote set to Disabled

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Acer Incorporated
Altos R360 F3 (Intel Xeon E5-2620 v3)

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**SPECfp_rate_base2006 = 237**

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---

**Platform Notes (Continued)**

Set Fan Profile set to Performance
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Mon Nov 9 15:57:18 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>model name</td>
<td>Intel(R) Xeon(R) CPU E5-2620 v3 @ 2.40GHz</td>
</tr>
<tr>
<td>1 &quot;physical id&quot;s (chips)</td>
<td></td>
</tr>
<tr>
<td>12 &quot;processors&quot;</td>
<td></td>
</tr>
<tr>
<td>cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)</td>
<td></td>
</tr>
<tr>
<td>cpu cores : 6</td>
<td></td>
</tr>
<tr>
<td>siblings : 12</td>
<td></td>
</tr>
<tr>
<td>physical 0: cores 0 1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>cache size : 15360 KB</td>
<td></td>
</tr>
</tbody>
</table>

From /proc/meminfo

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MemTotal:</td>
<td>131754848 kB</td>
</tr>
<tr>
<td>HugePages_Total:</td>
<td>0</td>
</tr>
<tr>
<td>Hugepagesize:</td>
<td>2048 kB</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME=Red Hat Enterprise Linux Server</td>
<td></td>
</tr>
<tr>
<td>VERSION=&quot;7.0 (Maipo)&quot;</td>
<td></td>
</tr>
<tr>
<td>ID=&quot;rhel&quot;</td>
<td></td>
</tr>
<tr>
<td>ID_LIKE=&quot;fedora&quot;</td>
<td></td>
</tr>
<tr>
<td>VERSION_ID=&quot;7.0&quot;</td>
<td></td>
</tr>
<tr>
<td>PRETTY_NAME=&quot;Red Hat Enterprise Linux Server 7.0 (Maipo)&quot;</td>
<td></td>
</tr>
<tr>
<td>ANSI_COLOR=&quot;0;31&quot;</td>
<td></td>
</tr>
<tr>
<td>CPE_NAME=&quot;cpe:/o:redhat:enterprise_linux:7.0:GA:server&quot;</td>
<td></td>
</tr>
<tr>
<td>redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)</td>
<td></td>
</tr>
<tr>
<td>system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)</td>
<td></td>
</tr>
<tr>
<td>system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server</td>
<td></td>
</tr>
</tbody>
</table>

uname -a:

Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 9 15:53

SPEC is set to: /usr/cpu2006

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/mapper/rhel-root</td>
<td>xfs</td>
<td>539G</td>
<td>49G</td>
<td>490G</td>
<td>9%</td>
<td>/</td>
</tr>
</tbody>
</table>

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
## Acer Incorporated

**Altos R360 F3 (Intel Xeon E5-2620 v3)**

<table>
<thead>
<tr>
<th>SPECfp_rate2006 =</th>
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### Platform Notes (Continued)

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 SE5C610.86B.01.01.0009.060120151350 06/01/2015**

**Memory:**  
8x Hynix HMA42GR7MF4N-TF 16 GB 2 rank 2133 MHz, configured at 1866 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:  
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/transparent_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop_caches  
runcp command invoked through numactl i.e.:  
umactl --interleave=all runspec <etc>  
The Altos R380 F3 and Altos R360 F3 are electronically equivalent.  
This result was measured on Altos R380 F3.

### 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  
```

### Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64  
416.gamess: -DSPEC_CPU_LP64  
433.milc: -DSPEC_CPU_LP64

Continued on next page
SPEC CFP2006 Result

Acer Incorporated
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Base Portability Flags (Continued)

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: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks (except as noted below):
icpc -m64

450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Fortran benchmarks:
ifort -m64

Continued on next page
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Peak Compiler Invocation (Continued)

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
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: -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)
   -O3(pass 2)  -no-prec-div(pass 2)
   -opt-mem-layout-trans=3(pass 2)  -prof-use(pass 2)
   -auto-ilp32

470.lbm: basepeak = yes
```

```
482.sphinx3: -xCORE-AVX2  -ipo  -O3  -no-prec-div -opt-mem-layout-trans=3
            -unroll2
```

C++ benchmarks:

```
444.namd: -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -ipo(pass 2)
   -O3(pass 2)  -no-prec-div(pass 2)
   -opt-mem-layout-trans=3(pass 2)  -prof-use(pass 2)  -fno-alias
   -auto-ilp32

447.dealII: basepeak = yes
```

Continued on next page
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Peak Optimization Flags (Continued)

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -03 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revB.html

You can also download the XML flags sources by saving the following links:
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</table>

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

Tested with SPEC CPU2006 v1.2.
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Originally published on 1 December 2015.