Acer Incorporated
Altos R360 F2 (Intel Xeon E5-2603)

SPECfp®2006 = 46.1
SPECfp_base2006 = 44.6

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

Hardware
CPU Name: Intel Xeon E5-2603
CPU Characteristics: 8 cores, 2 chips, 4 cores/chip
CPU MHz: 1800
FPU: Integrated
CPU(s) enabled: 2 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Software
Operating System: Red Hat Enterprise Linux Server release 6.3 (Santiago)
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4

Acer Incorporated
Altos R360 F2 (Intel Xeon E5-2603)

SPECfp®2006 = 46.1
SPECfp_base2006 = 44.6

Copyright 2006-2014 Standard Performance Evaluation Corporation
Acer Incorporated

Altos R360 F2 (Intel Xeon E5-2603)

SPEC CFP2006 Result

SPECfp2006 = 46.1
SPECfp_base20006 = 44.6

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

Test date: Mar-2013
Hardware Availability: Apr-2013
Software Availability: Jun-2012

L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 1 TB SATA, 7200 RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

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>410.bwaves</td>
<td>61.8</td>
<td>220</td>
<td>61.8</td>
<td>220</td>
<td>62.0</td>
<td>219</td>
<td>62.4</td>
<td>218</td>
<td>62.2</td>
<td>218</td>
<td>62.2</td>
<td>218</td>
</tr>
<tr>
<td>416.gamess</td>
<td><strong>1149</strong></td>
<td>17.0</td>
<td>1159</td>
<td>16.9</td>
<td>1149</td>
<td>17.0</td>
<td>1043</td>
<td>18.8</td>
<td>1037</td>
<td>18.9</td>
<td><strong>1038</strong></td>
<td>18.9</td>
</tr>
<tr>
<td>433.milc</td>
<td>274</td>
<td>33.5</td>
<td>274</td>
<td>33.5</td>
<td>274</td>
<td>33.5</td>
<td>269</td>
<td>34.1</td>
<td>271</td>
<td>33.9</td>
<td>271</td>
<td>33.8</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>350</td>
<td>20.4</td>
<td><strong>352</strong></td>
<td><strong>20.3</strong></td>
<td>353</td>
<td>20.2</td>
<td>350</td>
<td>20.4</td>
<td><strong>352</strong></td>
<td><strong>20.3</strong></td>
<td>353</td>
<td>20.2</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>54.6</td>
<td>219</td>
<td><strong>54.6</strong></td>
<td><strong>219</strong></td>
<td>55.4</td>
<td>216</td>
<td>54.6</td>
<td>219</td>
<td><strong>54.6</strong></td>
<td><strong>219</strong></td>
<td>55.4</td>
<td>216</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td><strong>83.4</strong></td>
<td><strong>113</strong></td>
<td>84.4</td>
<td>111</td>
<td>81.2</td>
<td>116</td>
<td><strong>83.4</strong></td>
<td><strong>113</strong></td>
<td>84.4</td>
<td>111</td>
<td>81.2</td>
<td>116</td>
</tr>
<tr>
<td>444.namd</td>
<td>655</td>
<td>12.2</td>
<td><strong>655</strong></td>
<td><strong>12.2</strong></td>
<td>655</td>
<td>12.2</td>
<td>644</td>
<td>12.5</td>
<td><strong>645</strong></td>
<td><strong>12.4</strong></td>
<td>645</td>
<td>12.4</td>
</tr>
<tr>
<td>447.dealII</td>
<td>416</td>
<td>27.5</td>
<td><strong>417</strong></td>
<td><strong>27.4</strong></td>
<td>417</td>
<td>27.4</td>
<td>416</td>
<td>27.5</td>
<td><strong>417</strong></td>
<td><strong>27.4</strong></td>
<td>417</td>
<td>27.4</td>
</tr>
<tr>
<td>450.soplex</td>
<td>405</td>
<td>20.6</td>
<td>409</td>
<td>20.4</td>
<td><strong>405</strong></td>
<td><strong>20.6</strong></td>
<td>405</td>
<td>20.6</td>
<td>409</td>
<td>20.4</td>
<td><strong>405</strong></td>
<td><strong>20.6</strong></td>
</tr>
<tr>
<td>453.povray</td>
<td>232</td>
<td>23.0</td>
<td>235</td>
<td>22.6</td>
<td><strong>235</strong></td>
<td><strong>22.6</strong></td>
<td>198</td>
<td>26.8</td>
<td>198</td>
<td>26.9</td>
<td><strong>198</strong></td>
<td><strong>26.8</strong></td>
</tr>
<tr>
<td>454.calculix</td>
<td>400</td>
<td>20.6</td>
<td>400</td>
<td>20.6</td>
<td>403</td>
<td>20.5</td>
<td>376</td>
<td>22.0</td>
<td><strong>376</strong></td>
<td><strong>21.9</strong></td>
<td>376</td>
<td>21.9</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>126</td>
<td>84.5</td>
<td>126</td>
<td>84.3</td>
<td><strong>126</strong></td>
<td><strong>84.5</strong></td>
<td>109</td>
<td>97.7</td>
<td><strong>108</strong></td>
<td><strong>98.0</strong></td>
<td>108</td>
<td>98.0</td>
</tr>
<tr>
<td>465.tonto</td>
<td>457</td>
<td>21.5</td>
<td><strong>459</strong></td>
<td><strong>21.4</strong></td>
<td>512</td>
<td>19.2</td>
<td>435</td>
<td>22.6</td>
<td><strong>433</strong></td>
<td><strong>22.7</strong></td>
<td>431</td>
<td>22.8</td>
</tr>
<tr>
<td>470.lbm</td>
<td>62.0</td>
<td>222</td>
<td>61.4</td>
<td>224</td>
<td><strong>61.6</strong></td>
<td><strong>223</strong></td>
<td>62.0</td>
<td>222</td>
<td>61.4</td>
<td>224</td>
<td><strong>61.6</strong></td>
<td><strong>223</strong></td>
</tr>
<tr>
<td>481.wrf</td>
<td><strong>259</strong></td>
<td><strong>43.1</strong></td>
<td>256</td>
<td>43.6</td>
<td>260</td>
<td>42.9</td>
<td><strong>259</strong></td>
<td><strong>43.1</strong></td>
<td>256</td>
<td>43.6</td>
<td>260</td>
<td>42.9</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>469</td>
<td>41.5</td>
<td><strong>471</strong></td>
<td><strong>41.4</strong></td>
<td>478</td>
<td>40.7</td>
<td><strong>466</strong></td>
<td><strong>41.8</strong></td>
<td>468</td>
<td>41.7</td>
<td>465</td>
<td>41.9</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Sysinfo program /usr/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdfff5032aaa42e583f96b07f99d3
running on altosr380f2 Wed Mar 20 10:51:42 2013

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 E5-2603 0 @ 1.80GHz
Continued on next page
Acer Incorporated
Altos R360 F2 (Intel Xeon E5-2603)

SPECfp2006 = 46.1
SPECfp_base2006 = 44.6

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

Platform Notes (Continued)

2 "physical id"s (chips)
8 "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 : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB

From /proc/meminfo
MemTotal: 132113996 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.3 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)

uname -a:
Linux altosr380f2 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36 EDT 2012
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 20 10:50

SPEC is set to: /usr/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/vg_altosr380f2-lv_root ext4 913G 73G 794G 9% /

Additional information from dmidecode:
Memory:
16x Hynix HMT31GR7CFR4C-PB 8 GB 1600 MHz 2 rank

(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 = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "8"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages enabled with:

Continued on next page
Acer Incorporated
Altos R360 F2 (Intel Xeon E5-2603)

SPECfp2006 = 46.1
SPECfp_base2006 = 44.6

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

Test date: Mar-2013
Hardware Availability: Apr-2013
Software Availability: Jun-2012

General Notes (Continued)

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
Altos R360 F2 and Altos R380 F2 are electronically equivalent.
This result was measured on Altos R380 F2.

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
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 -nofor_main
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

Base Optimization Flags

C benchmarks:
  -xAVX -ipo -03 -no-prec-div -static -parallel -opt-prefetch
  -ansi-alias

Continued on next page
Acer Incorporated
Altos R360 F2 (Intel Xeon E5-2603)

| SPECfpu2006 | 46.1 |
| SPECfp_base2006 | 44.6 |

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

Test date: Mar-2013
Hardware Availability: Apr-2013
Software Availability: Jun-2012

---

**Base Optimization Flags (Continued)**

C++ benchmarks:
- `xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
- `xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
- `xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias`

---

**Peak Compiler Invocation**

C benchmarks:
- `icc -m64`

C++ benchmarks:
- `icpc -m64`

Fortran benchmarks:
- `ifort -m64`

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

---

**Peak Portability Flags**

Same as Base Portability Flags

---

**Peak Optimization Flags**

C benchmarks:
- `433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias`
- `470.lbm: basepeak = yes`
- `482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

C++ benchmarks:

Continued on next page
Acer Incorporated
Altos R360 F2 (Intel Xeon E5-2603)

SPECfp2006 = 46.1
SPECfp_base2006 = 44.6

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

Test date: Mar-2013
Hardware Availability: Apr-2013
Software Availability: Jun-2012

### Peak Optimization Flags (Continued)

**Fortran benchmarks:**

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

-prec-div(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

**Benchmarks using both Fortran and C:**

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
<table>
<thead>
<tr>
<th>SPEC CFP2006 Result</th>
</tr>
</thead>
</table>

**Acer Incorporated**  
**Altos R360 F2 (Intel Xeon E5-2603)**

| SPECfp2006 = | 46.1 |
| SPECfp_base2006 = | 44.6 |

| CPU2006 license: | 97 |
| Test sponsor: | Acer Incorporated |
| Tested by: | Acer Incorporated |
| Test date: | Mar-2013 |
| Hardware Availability: | Apr-2013 |
| Software Availability: | Jun-2012 |

SPEC and SPECfp 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 9 April 2013.