ACTION S.A.  
ACTINA SOLAR 200 X3 (Intel Xeon E5540)

SPECint\_rate2006 = 211  
SPECint\_rate\_base2006 = 197

CPU2006 license: 9008  
Test sponsor: ACTION S.A.  
Tested by: ACTION S.A.  
Test date: Nov-2009  
Hardware Availability: Apr-2009  
Software Availability: Feb-2009

**Hardware**

- **CPU Name:** Intel Xeon E5540  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.8 GHz  
- **CPU MHZ:** 2533  
- **FPU:** Integrated  
- **CPU(s) enabled:** 8 cores, 2 chips, 4 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  
- **L3 Cache:** 8 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 24 GB (6 x 4 GB PC3-8500, 1066 MHz, DDR3, ECC)  
- **Disk Subsystem:** 160 GB SATA, 7200 RPM  
- **Other Hardware:** None

**Operating System:** SuSe Linux Enterprise Server 10 (x86_64) with SP2, kernel 2.6.16.60-0.21-smp  
**Compiler:** Intel C++ Compiler 11.0 for Linux  
**Build:** 20080930 Package ID: l_cproc_p_11.0.066  
**Auto Parallel:** No  
**File System:** ReiserFS  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32-bit  
**Peak Pointers:** 32/64-bit  
**Other Software:** Binutils 2.18.50.0.7.20080502  
**Microquill SmartHeap V8.1**
**SPEC CINT2006 Result**

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<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Base Portability Flags</th>
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<td>400.perlbench</td>
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<td>866</td>
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<td>-DSPEC_CPU_LINUX_IA32</td>
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<td>1197</td>
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<td>403.gcc</td>
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<td>429.mcf</td>
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</tr>
<tr>
<td>445.gobmk</td>
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<td>860</td>
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<tr>
<td>456.hmmer</td>
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<td>458.sjeng</td>
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<td>462.libquantum</td>
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<td>464.h264ref</td>
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<td>473.astar</td>
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<td>873</td>
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<td>873</td>
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<td>-DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>483.xalancbmk</td>
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<td>490</td>
<td>225</td>
<td>489</td>
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<td>-DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

**Results 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.

**General Notes**

'numactl' was used to bind copies to the cores  
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

**Base Compiler Invocation**

C benchmarks:
- icc

C++ benchmarks:
- icpc

**Base Portability Flags**

- 400.perlbench: -DSPEC_CPU_LINUX_IA32  
- 462.libquantum: -DSPEC_CPU_LINUX  
- 483.xalancbmk: -DSPEC_CPU_LINUX
SPEC CINT2006 Result

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Base Optimization Flags

C benchmarks:
- xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
- opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
- xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
- L/spec/cpu2006.1.1/lib -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc
401.bzip2: /opt/intel/Compiler/11.0/080/bin/intel64/icc
456.hmmer: /opt/intel/Compiler/11.0/080/bin/intel64/icc
458.sjeng: /opt/intel/Compiler/11.0/080/bin/intel64/icc

C++ benchmarks (except as noted below):
icpc
473.astar: /opt/intel/Compiler/11.0/080/bin/intel64/icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX
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Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -o3 -no-prec-div -static -inline-call
-opt-malloc-options=3

429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
-ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -o3 -no-prec-div -static -unroll2
-ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -o3 -no-prec-div -static
-opt-malloc-options=3 -opt-prefetch

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=routine -auto-ilp32
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

483.xalancbmk: basepeak = yes
### ACTION S.A.

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### SPECint Rate 2006

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### Peak Other Flags

**C benchmarks:**

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at [http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.html](http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.html)

You can also download the XML flags source by saving the following link: [http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.xml](http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.xml)