Acer Incorporated

Altos R320 F3 (Intel Xeon E3-1220 v3)

SPECint\_rate2006 = 175
SPECint\_rate\_base2006 = 168

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

Test date: May-2013
Hardware Availability: Sep-2013
Software Availability: Feb-2013

**Hardware**

<table>
<thead>
<tr>
<th>SPECint_rate_base2006 = 168</th>
</tr>
</thead>
</table>

| SPECint\_rate2006 = 175 |

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E3-1220 v3</td>
<td>Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz</td>
<td>Compiler: C++: Version 13.0.0.133 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>CPU MHz: 3100</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>File System: ext4</td>
</tr>
<tr>
<td>CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable: 1 chip</td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Other Software: Microquill SmartHeap V10.0</td>
</tr>
<tr>
<td>L3 Cache: 8 MB I+D on chip per chip</td>
<td>Other Hardware: None</td>
</tr>
<tr>
<td>Other Cache: None</td>
<td>Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem: 1 x 500 GB SATA, 7200 RPM</td>
<td><strong>Software</strong></td>
</tr>
<tr>
<td>Other Hardware: None</td>
<td>Hardware: None</td>
</tr>
</tbody>
</table>

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info@spec.org
http://www.spec.org/
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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>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>4</td>
<td>281</td>
<td>139</td>
<td>280</td>
<td>139</td>
<td>280</td>
<td>140</td>
<td>280</td>
<td>140</td>
<td>280</td>
<td>140</td>
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<tr>
<td>401.bzip2</td>
<td>4</td>
<td>502</td>
<td>76.8</td>
<td>476</td>
<td>81.0</td>
<td>478</td>
<td>80.8</td>
<td>476</td>
<td>81.0</td>
<td>478</td>
<td>80.8</td>
</tr>
<tr>
<td>403.gcc</td>
<td>4</td>
<td>257</td>
<td>125</td>
<td>255</td>
<td>126</td>
<td>256</td>
<td>126</td>
<td>256</td>
<td>126</td>
<td>256</td>
<td>126</td>
</tr>
<tr>
<td>429.mcf</td>
<td>4</td>
<td>150</td>
<td>243</td>
<td>148</td>
<td>247</td>
<td>148</td>
<td>246</td>
<td>150</td>
<td>243</td>
<td>148</td>
<td>246</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>4</td>
<td>408</td>
<td>103</td>
<td>409</td>
<td>103</td>
<td>408</td>
<td>103</td>
<td>409</td>
<td>103</td>
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<td>103</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>4</td>
<td>169</td>
<td>221</td>
<td>165</td>
<td>226</td>
<td>163</td>
<td>229</td>
<td>152</td>
<td>245</td>
<td>153</td>
<td>243</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>4</td>
<td>397</td>
<td>122</td>
<td>397</td>
<td>122</td>
<td>397</td>
<td>122</td>
<td>400</td>
<td>105</td>
<td>400</td>
<td>105</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>4</td>
<td>45.4</td>
<td>54.2</td>
<td>45.4</td>
<td>54.2</td>
<td>45.4</td>
<td>54.2</td>
<td>45.4</td>
<td>54.2</td>
<td>45.4</td>
<td>54.2</td>
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<tr>
<td>464.h264ref</td>
<td>4</td>
<td>392</td>
<td>226</td>
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<td>376</td>
<td>235</td>
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<td>235</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>4</td>
<td>295</td>
<td>84.9</td>
<td>304</td>
<td>82.3</td>
<td>300</td>
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<td>86.9</td>
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<tr>
<td>473.astar</td>
<td>4</td>
<td>317</td>
<td>88.6</td>
<td>319</td>
<td>87.9</td>
<td>316</td>
<td>88.7</td>
<td>317</td>
<td>88.6</td>
<td>319</td>
<td>87.9</td>
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<tr>
<td>483.xalancbmk</td>
<td>4</td>
<td>137</td>
<td>201</td>
<td>138</td>
<td>200</td>
<td>137</td>
<td>201</td>
<td>137</td>
<td>201</td>
<td>137</td>
<td>201</td>
</tr>
</tbody>
</table>

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

### Submit Notes
The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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
Sysinfo program /usr/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$$ e86d102572650a6e4d596a3cee98f191 running on localhost.localdomain Thu May 30 23:26:10 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 E3-1220 v3 @ 3.10GHz
- 1 "physical id"s (chips)
- 4 "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

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Platform Notes (Continued)

- physical 0: cores 0 1 2 3
- cache size : 8192 KB

From /proc/meminfo
MemTotal: 16245384 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013 x86_64 x86_64 x86_64 GNU/Linux
run-level 3 May 30 23:08

SPEC is set to: /usr/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_root ext4 451G 5.4G 423G 2% /

Additional information from dmidecode:
BIOS Acer P01 04/23/2013
Memory:
2x 8 GB
2x Kingston ACR1GX72D3E16C11G 8 GB 1600 MHz 2 rank
2x [Empty] [Empty]

(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 i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
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Base Compiler Invocation

C benchmarks:
  icc  -m32

C++ benchmarks:
  icpc  -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

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

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc  -m32

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

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Peak Compiler Invocation (Continued)

C++ benchmarks:
\texttt{icpc -m32}

Peak Portability Flags

- \texttt{400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64}
- \texttt{401.bzip2: -DSPEC\_CPU\_LP64}
- \texttt{456.hmmer: -DSPEC\_CPU\_LP64}
- \texttt{458.sjeng: -DSPEC\_CPU\_LP64}
- \texttt{462.libquantum: -DSPEC\_CPU\_LINUX}
- \texttt{483.xalancbmk: -DSPEC\_CPU\_LINUX}

Peak Optimization Flags

C benchmarks:

- \texttt{400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -auto-ilp32}

- \texttt{401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -opt-prefetch -auto-ilp32 -ansi-alias}

- \texttt{403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div}

- \texttt{429.mcf: basepeak = yes}

- \texttt{445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
  -ansi-alias -opt-mem-layout-trans=3}

- \texttt{456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div unroll12 -auto-ilp32}

- \texttt{458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -unroll14 -auto-ilp32}

- \texttt{462.libquantum: basepeak = yes}

- \texttt{464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -unroll12 -ansi-alias}

C++ benchmarks:

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Peak Optimization Flags (Continued)

471.omnetpp: -xCORE-AVX2(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=block -Wl,-z,muldefs
-L/sh -lsmartheap

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-ic13-official-linux64.20130716.html
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-revA.20130423.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130716.xml
http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.2-revA.20130423.xml

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For other inquiries, please contact webmaster@spec.org.

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