Bull SAS
NovaScale R460
(Intel Xeon processor E5310, 1.60GHz)

SPECint\_rate2006 = 63.4
SPECint\_rate_base2006 = 59.7

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS

Test date: Jul-2007
Hardware Availability: May-2007
Software Availability: May-2007

<table>
<thead>
<tr>
<th>SPEC Benchmark</th>
<th>Base Rate</th>
<th>CPU2006 Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>53.4</td>
<td>84.9</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>51.0</td>
<td>82.3</td>
</tr>
<tr>
<td>403.gcc</td>
<td>53.3</td>
<td>82.3</td>
</tr>
<tr>
<td>429.mcf</td>
<td>42.5</td>
<td>89.2</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>42.3</td>
<td>89.2</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>66.6</td>
<td>84.1</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>42.3</td>
<td>84.1</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>38.3</td>
<td>74.9</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>37.8</td>
<td>136</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>32.5</td>
<td>129</td>
</tr>
<tr>
<td>473.astar</td>
<td>32.3</td>
<td>45.6</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>45.0</td>
<td>72.6</td>
</tr>
</tbody>
</table>

Hardware

- CPU Name: Intel Xeon E5310
- CPU Characteristics: 1.60 GHz, 8 MB L2, 1066 MHz system bus
- CPU MHz: 1600
- FPU: Integrated
- CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
- CPU(s) orderable: 1 to 2 chips
- Primary Cache: 32 KB I + 32 KB D on chip per core
- Secondary Cache: 8 MB 1+D on chip per core, 4 MB shared / 2 cores
- L3 Cache: None
- Other Cache: None
- Memory: 12 GB (12x1 GB) FB-DIMM PC2-4200F ECC CL4
- Disk Subsystem: 1x73 GB SAS, 15000 RPM
- Other Hardware: None

Software

- Operating System: SUSE LINUX Enterprise Server 10
- Compiler: Intel C++ Compiler for Linux32 version 10.0
- Auto Parallel: No
- System State: Multi-user run level 3
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: SmartHeap library V8.1
- Binutils 2.17.50.0.15
Bull SAS

NovaScale R460
(Intel Xeon processor E5310, 1.60GHz)

SPECint_rate2006 = 63.4
SPECint_rate_base2006 = 59.7

CPU2006 license: 20
Test date: Jul-2007
Test sponsor: Bull SAS
Hardware Availability: May-2007
Tested by: Bull SAS
Software Availability: May-2007

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds Base</th>
<th>Seconds Ratio</th>
<th>Seconds Peak</th>
<th>Seconds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>920</td>
<td>85.0</td>
<td>921</td>
<td>84.9</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>1517</td>
<td>50.9</td>
<td>1514</td>
<td>51.0</td>
</tr>
<tr>
<td>403.gcc</td>
<td>8</td>
<td>1207</td>
<td>53.3</td>
<td>1209</td>
<td>53.3</td>
</tr>
<tr>
<td>429.mcf</td>
<td>8</td>
<td>1724</td>
<td>42.3</td>
<td>1723</td>
<td>42.3</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>8</td>
<td>1015</td>
<td>82.7</td>
<td>1021</td>
<td>82.2</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>1122</td>
<td>66.5</td>
<td>1121</td>
<td>66.6</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>1292</td>
<td>74.9</td>
<td>1292</td>
<td>74.9</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>8</td>
<td>4390</td>
<td>37.8</td>
<td>4386</td>
<td>37.8</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>8</td>
<td>1372</td>
<td>129</td>
<td>1374</td>
<td>129</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>1545</td>
<td>32.4</td>
<td>1546</td>
<td>32.3</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>1251</td>
<td>44.9</td>
<td>1249</td>
<td>45.0</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>761</td>
<td>72.5</td>
<td>760</td>
<td>72.6</td>
</tr>
</tbody>
</table>

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode

General Notes

The NovaScale R440 and the NovaScale R460 models are electronically equivalent.
The results have been measured on a NovaScale R460 model.

Base Compiler Invocation

C benchmarks:
  icc
C++ benchmarks:
  icpc
Bull SAS
NovaScale R460
(Intel Xeon processor E5310, 1.60GHz)

SPECint_rate2006 = 63.4
SPECint_rate_base2006 = 59.7

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS
Test date: Jul-2007
Hardware Availability: May-2007
Software Availability: May-2007

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
- fast

C++ benchmarks:
- -xT -ipo -O3 -no-prec-div -ansi-alias
- -L/spec/cpu2006/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/cce/10.0.023/bin/icc
- L/opt/intel/cce/10.0.023/lib
- I/opt/intel/cce/10.0.023/include

456.hmmer: /opt/intel/cce/10.0.023/bin/icc
- L/opt/intel/cce/10.0.023/lib
- I/opt/intel/cce/10.0.023/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page
Bull SAS
NovaScale R460
(Intel Xeon processor E5310, 1.60GHz)

SPECint_rate2006 = 63.4
SPECint_rate_base2006 = 59.7

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS

Test date: Jul-2007
Hardware Availability: May-2007
Software Availability: May-2007

Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof_gen(pass 1) -prof_use(pass 2) -fast -ansi-alias
-prefetch
401.bzip2: -prof_gen(pass 1) -prof_use(pass 2) -fast
403.gcc: basepeak = yes
429.mcf: -fast -prefetch
445.gobmk: -prof_gen(pass 1) -prof_use(pass 2) -xT -02 -ipo
-no-prec_div -ansi-alias
456.hmmer: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll2
-ansi-alias
458.sjeng: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4
462.libquantum: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4 -Ob0
-prefetch -opt-streaming-stores always
464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof_gen(pass 1) -prof_use(pass 2) -xT -03 -ipo
-no-prec_div -ansi-alias -L/spec/cpu2006/lib -lsmartheap
473.astar: Same as 471.omnetpp
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca
Bull SAS
NovaScale R460
(Intel Xeon processor E5310, 1.60GHz)

SPECint_rate2006 = 63.4
SPECint_rate_base2006 = 59.7

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS

Test date: Jul-2007
Hardware Availability: May-2007
Software Availability: May-2007

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.xml

SPEC and SPECint 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 v1.0.
Report generated on Tue Jul 22 14:02:10 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 October 2007.