SPEC® CINT2006 Result

NEC Corporation

Express5800/R120f-2E (Intel Xeon E5-2603 v3)

SPECint®2006 = 30.7
SPECint_base2006 = 29.6

CPU2006 license: 9006
Test sponsor: NEC Corporation
Test date: Feb-2015
Tested by: NEC Corporation
Software Availability: Jul-2014

Hardware
CPU Name: Intel Xeon E5-2603 v3
CPU Characteristics:
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1

400.perlbench = 21.5
401.bzip2 = 11.9
403.gcc = 17.7
429.mcf = 34.3
445.gobmk = 13.3
456.hmmer = 13.1
458.sjeng = 16.1
462.libquantum = 26.5
464.h264ref = 19.6
471.omnetpp = 14.8
473.astar = 15.8
483.xalancbmk = 32.5

SPECint_base2006 = 29.6
SPECint2006 = 30.7
### SPEC CINT2006 Result

**NEC Corporation**

Express5800/R120f-2E (Intel Xeon E5-2603 v3)

<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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>513</td>
<td>19.0</td>
<td>512</td>
<td>19.1</td>
<td>513</td>
<td>19.1</td>
<td>455</td>
<td>21.5</td>
<td>455</td>
<td>21.5</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>819</td>
<td>11.8</td>
<td>815</td>
<td>11.8</td>
<td>818</td>
<td>11.8</td>
<td>813</td>
<td>11.9</td>
<td>813</td>
<td>11.9</td>
</tr>
<tr>
<td>403.gcc</td>
<td>460</td>
<td>17.5</td>
<td>460</td>
<td>17.5</td>
<td>461</td>
<td>17.5</td>
<td>455</td>
<td>17.7</td>
<td>455</td>
<td>17.7</td>
</tr>
<tr>
<td>429.mcf</td>
<td>266</td>
<td>34.3</td>
<td>266</td>
<td>34.3</td>
<td>269</td>
<td>33.9</td>
<td>266</td>
<td>34.3</td>
<td>266</td>
<td>34.3</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>802</td>
<td>13.1</td>
<td>800</td>
<td>13.1</td>
<td>800</td>
<td>13.1</td>
<td>788</td>
<td>13.3</td>
<td>788</td>
<td>13.3</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>295</td>
<td>31.7</td>
<td>294</td>
<td>31.7</td>
<td>295</td>
<td>31.7</td>
<td>295</td>
<td>31.7</td>
<td>295</td>
<td>31.7</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>753</td>
<td>16.1</td>
<td>753</td>
<td>16.1</td>
<td>753</td>
<td>16.1</td>
<td>751</td>
<td>16.1</td>
<td>751</td>
<td>16.1</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>8.30</td>
<td>2500</td>
<td>8.30</td>
<td>2500</td>
<td>8.31</td>
<td>2490</td>
<td>8.30</td>
<td>2500</td>
<td>8.30</td>
<td>2490</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>836</td>
<td>26.5</td>
<td>839</td>
<td>26.4</td>
<td>835</td>
<td>26.5</td>
<td>836</td>
<td>26.5</td>
<td>839</td>
<td>26.4</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>423</td>
<td>14.8</td>
<td>422</td>
<td>14.8</td>
<td>421</td>
<td>14.8</td>
<td>319</td>
<td>19.6</td>
<td>320</td>
<td>19.5</td>
</tr>
<tr>
<td>473.astar</td>
<td>444</td>
<td>15.8</td>
<td>444</td>
<td>15.8</td>
<td>447</td>
<td>15.7</td>
<td>446</td>
<td>15.8</td>
<td>447</td>
<td>15.7</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>212</td>
<td>32.5</td>
<td>213</td>
<td>32.3</td>
<td>212</td>
<td>32.5</td>
<td>212</td>
<td>32.5</td>
<td>213</td>
<td>32.3</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**

BIOS Settings:
- Power Management Policy: Custom
- Energy Performance: Performance
- Patrol Scrub: Disabled

**General Notes**

Environment variables set by runspec before the start of the run:
- KMP_AFFINITY = "granularity=fine,compact"
- LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
- OMP_NUM_THREADS = "12"

Transparent Huge Pages enabled with:
- echo always > /sys/kernel/mm/redhat_transparent_hugepage/enable

**Base Compiler Invocation**

C benchmarks:
- icc -m64
NEC Corporation

Expression5800/R120f-2E (Intel Xeon E5-2603 v3)

SPECint2006 = 30.7
SPECint_base2006 = 29.6

CPU2006 license: 9006
Test sponsor: NEC Corporation
Test date: Feb-2015
Tested by: NEC Corporation
Hardware Availability: Jan-2015
Software Availability: Jul-2014

Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlb benchmark: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlb benchmark: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
445.gobmk: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Continued on next page
SPEC CINT2006 Result

NEC Corporation
Express5800/R120f-2E (Intel Xeon E5-2603 v3)

SPECint2006 = 30.7
SPECint_base2006 = 29.6

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Feb-2015
Hardware Availability: Jan-2015
Software Availability: Jul-2014

Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):
   icpc -m64
   471.omnetpp: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

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)
   -opt-prefetch -ansi-alias
   401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
   -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
   -opt-prefetch -ansi-alias
   403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
      -opt-malloc-options=3 -auto-ilp32
   429.mcf: basepeak = yes
   445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
      -ansi-alias
   456.hmmer: basepeak = yes
   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
   462.libquantum: basepeak = yes

Continued on next page
SPEC CINT2006 Result

NEC Corporation
Expression5800/R120f-2E (Intel Xeon E5-2603 v3)

SPECint2006 = 30.7
SPECint_base2006 = 29.6

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Feb-2015
Hardware Availability: Jan-2015
Software Availability: Jul-2014

Peak Optimization Flags (Continued)

464.h264ref: basepeak = yes

C++ benchmarks:

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) -opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.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 v1.2.
Originally published on 24 February 2015.