SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by NEC or Intel.
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SPEC CINT2006 Result

NEC Corporation

Express5800/A2040b (Intel Xeon E7-4820 v2)

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

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

Test date: Mar-2014
Hardware Availability: Mar-2014
Software Availability: Oct-2013

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by NEC or Intel.

Platform Notes

BIOS Settings:
Memory RAS Mode: Independent mode

General Notes:

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = */opt/SmartHeap_10mc/lib:/opt/SmartHeap_10mc/lib64:/opt/intel/composer_xe_2013_sp1.1.106/compiler/lib/ia32:/opt/intel/composer_xe_2013_sp1.1.106/compiler/lib/intel64
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Non-Compliant

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by NEC or Intel.

Base Compiler Invocation

C benchmarks:
icc -m32

C++ benchmarks:
icpc -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
42.libquantum: -DSPEC_CPU_LINUX
48.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

Continued on next page
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Base Optimization Flags (Continued)

- xsSE4.2 -ipo -O3 -no-prec-div -opt-prec-match -opt-mem-layout-trans=3
- Wl,-z,muldefs -L/opt/SmartHeap_10mc/lib -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
56.hmmer: icc -m64
458.sjeng: icc -m64
462.libquantum: icc -m64

C++ benchmarks

icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page
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### Peak Portability Flags (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

### Peak Optimization Flags

**C benchmarks:**

- **400.perlbench:**
  - -xSSE4.2
  - -prof-gen(pass 1)
  - -ipo(pass 2)
  - -O3(pass 2)
  - -no-prec-div(pass 2)
  - -prof-use(pass 2)
  - -auto-ilp32

- **401.bzip2:**
  - -xSSE4.2
  - -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

- **403.gcc:**
  - -xSSE4.2
  - -ipo
  - -O3
  - -no-prec-div

- **429.mcf:**
  - basepeak = yes

- **445.gobmk:**
  - -xSSE4.2
  - -prof-gen(pass 1)
  - -prof-use(pass 2)
  - -opt-mem-layout-trans=3

- **462.libquantum:**
  - basepeak = yes

**C++ benchmarks:**

- **471.omnetpp:**
  - -xSSE4.2
  - -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/opt/SmartHeap_10mc/lib
  - -lmartheap

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Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/NEC-platform-Settings-V1.2-A2040b-RevA.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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