**SPEC® CINT2006 Result**

**IBM Corporation**

**IBM System x3455 (AMD Opteron 2347)**

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>NC</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 11  
**Test sponsor:** IBM Corporation  
**Tested by:** Advanced Micro Devices  
**Test date:** Aug-2007  
**Hardware Availability:** Nov-2007  
**Software Availability:** Oct-2007

**SPEC has determined that this result was not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter reported that the result would not meet the 3 month availability requirement in the SPEC CPU2006 run rules due to a change in the availability date of the system.**

400.perlbench  
401.bzip2  
403.gcc  
429.mcf  
445.gobmk  
456.hmmer  
458.sjeng  
462.libquantum  
464.h264ref  
471.omnetpp  
473.astar  
483.xalancbmk

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System:</strong> SuSE Linux Enterprise Server 10 SP1 64-bit kernel</td>
<td><strong>CPU Name:</strong> AMD Opteron 2347</td>
</tr>
<tr>
<td><strong>Compiler:</strong> The Portland Group (PGI)</td>
<td><strong>CPU Characteristics:</strong> Integrated</td>
</tr>
<tr>
<td>PGI pgcc 7.1-0 C Compiler</td>
<td><strong>CPU MHz:</strong> 1900</td>
</tr>
<tr>
<td>PGI pgCC 7.1-0 C++ Compiler</td>
<td><strong>FPU:</strong> Integrated</td>
</tr>
<tr>
<td>PathScale Compiler Suite, Release 3.0</td>
<td><strong>CPU(s) enabled:</strong> 8 cores, 2 chips, 4 cores/chip</td>
</tr>
<tr>
<td><strong>Auto Parallel:</strong> No</td>
<td><strong>CPU(s) orderable:</strong> 1, 2 chips</td>
</tr>
<tr>
<td><strong>File System:</strong> ReiserFS</td>
<td><strong>Primary Cache:</strong> 64 KB I + 64 KB D on chip per core</td>
</tr>
</tbody>
</table>
IBM Corporation

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Results Table

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<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
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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 environment stack size
'ulimit -l 2457600' was used to set environment locked pages in memory quantity
'numactl' was used to bind copies to the cores
Set vm.nr_hugepages=1200 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Environment variable PGI_HUGE_PAGES set to 150
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### Base Compiler Invocation

- **C benchmarks:**
  - pgcc

- **C++ benchmarks:**
  - pgcpp

### Base Portability Flags

- 400.perlbench: -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
- 483.xalancbmk: -DSPEC_CPU_LINUX

### Base Optimization Flags

- **C benchmarks:**
  - -fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed -Msmartalloc=huge:840 -tp barcelona-64 -Bstatic_pgi

- **C++ benchmarks:**
  - -fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448 --zc_eh -tp barcelona -Bstatic_pgi
SPEC CINT2006 Result

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### Base Other Flags

- **C benchmarks:** `-w`
- **C++ benchmarks:** `-w`

### Peak Compiler Invocation

- **C benchmarks (except as noted below):**
  - pgcc
  - 400.perlbench: pathcc
  - 403.gcc: pathcc
  - 445.gobmk: pathcc
  - 464.h264ref: pathcc
- **C++ benchmarks (except as noted below):**
  - pgcpp
  - 483.xalancbmk: pathcc

### Peak Portability Flags

- 400.perlbench: `-DSPEC_CPU_LP64` `-DSPEC_CPU_LINUX_X64`
- 401.bzip2: `-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`

Continued on next page
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Peak Portability Flags (Continued)

464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-LNO:opt=0

401.bzip2: -Mfpi(pass 1) -Mfpo(pass 2) -fast -O4
-Msmartalloc huge:448 -tp barcelona-64 -Bstatic_pgi

403.gcc: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:fast

-tp barcelona -Bstatic_pgi

45.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off
-NO:rettype_expr=on
-fast -Msmartalloc=large:448 -Mfprelaxed -Msafeptr
-Mipa=const -Mipa=ptr -Mipa=arg -tp barcelona-64
-Bstatic_pgi

458.jeng: -Mfpi(pass 1) -Mipa=fast(pass 2) -Mipa=inline:1(pass 2)
-Mipa=noarg(pass 2) -Mfpo(pass 2) -fast
-Msmartalloc=large:448 -Mfprelaxed -tp barcelona-64
-Bstatic_pgi

462.libquantum: -fast -Mfprelaxed -Msmartalloc=large:448 -Munroll=m:4
-Mipa=fast -Mipa=inline -Mipa=noarg -Bstatic_pgi

Non-Compliant
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Peak Optimization Flags (Continued)

464.h264ref: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0

C++ benchmarks:

471.omnetpp: basepeak = yes
473.astar: basepeak = yes
483.xalancbmk: -Ofast -m32 -O4 -unrollTimes_max=8
-L/cpu2006/work/cpu2006/SmartHeap -lsmartheap

Peak Other Flags

C benchmarks (except as noted below):
-w
400.perlbench: No flags used
403.gcc: No flags used
445.gobmk: No flags used

C++ benchmarks (except as noted below):
-w
483.xalancbmk: No flags used

The flags file that was used to format this result can be browsed at:
http://www.spec.org/cpu2006/flags/amd814GH-flags.20090714.html
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You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/amd814GH-flags.20090714.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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