Supermicro
(Test Sponsor: Advanced Micro Devices)

Supermicro H8DMU+, AMD Opteron 2356

SPECint_rate2006 = NC
SPECint_rate_base2006 = NC

CPU2006 license: 49
Test sponsor: Advanced Micro Devices
Tested by: Advanced Micro Devices

Test date: Sep-2007
Hardware Availability: Dec-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 processor.

|--------|---------------|----------|---------|---------|-----------|-----------|-----------|---------------|-------------|-------------|------------|-------------|

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**Hardware**

CPU Name: AMD Opteron 2356
CPU Characteristics:
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1.2 chips
Primary Cache: 64 KB I + 64 KB D on chip per core

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**Software**

Operating System:
SuSE Linux Enterprise Server 10 SP1 64-bit kernel
The Portland Group (PGI)
PGI pgcc 7.1-0 C Compiler
PGI pgCC 7.1-0 C++ Compiler
The PathScale Compiler v3.0
PathScale pathcc 3.0 C Compiler
PathScale pathCC 3.0 C++ Compiler

Compiler:
Continued on next page

Non-Compliant

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Operating System Notes

'ulimit -s unlimited' used to set environment stack size
'ulimit -l 2457600' was used to set environment lock pages 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

Results Table

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
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General Notes
The test system can be assembled using two Ablecom PWS-702A-1R 700W 12V redundant power supplies.

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
501.hmmer: -DSPEC_CPU_LP64
558.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
493.lbm: -DSPEC_CPU_LINUX

Base Optimization Flags
C benchmarks:
-fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed
-Msmartalloc=840 -tp barcelona-64 -Bstatic_pgi

C++ benchmarks:
-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=448
--zc_eh -tp barcelona -Bstatic_pgi
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**Base Other Flags**

<table>
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<tr>
<th>C benchmarks:</th>
<th>-w</th>
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<tr>
<td>C++ benchmarks:</td>
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**Peak Compiler Invocation**

<table>
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<tr>
<th>C benchmarks (except as noted below):</th>
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<td>403.gcc: pathcc</td>
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<td>445.gobmk: pathcc</td>
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<td>464.h264ref: pathcc</td>
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<table>
<thead>
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<tr>
<td>483.xalancbmk: pathCC</td>
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**Peak Portability Flags**

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</tr>
<tr>
<td>456.hmmer: -DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>458.sjeng: -DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX</td>
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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
403gcc: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3 -OPT:fast
455.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3 -OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off -WNO:retype_expr=on
478.jeng: -Mfpi(pass 1) -Mipa=fast(pass 2) -Mipa=inline:1(pass 2) -Mipa=const -Mipa=ptr -Mipa=arg -tp barcelona-64 -Bstatic_pgi
462.libquantum: -fast -Mfprelaxed -Msmartalloc huge:448 -Munroll=m:4 -Mipa=fast -Mipa=inline -Mipa=noarg -Bstatic_pgi

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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 -O2 -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
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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