SPEC® CINT2006 Result

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Tyan
(Test Sponsor: Advanced Micro Devices)

Tyan Thunder n425QE (S4985E), AMD Opteron 8360 SE

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.

Non-Compliant

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

Hardware

CPU Name:	AMD Opteron 8360 SE
CPU Characteristics:	
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core

Continued on next page

Software

Operating System:	SuSE Linux Enterprise Server 10 SP1 64-bit kernel
Compiler:	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

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Secondary Cache:	512 KB I+D on chip per core	Auto Parallel:	No
L3 Cache:	2 MB I+D on chip per chip	File System:	ReiserFS
Other Cache:	None	System State:	Multi-user, run level 3
Memory:	32 GB (16x2GB, DDR2-667 CL5 Reg Dual Rank)	Base Pointers:	32/64-bit
Disk Subsystem:	1x250GB SATA, 7200 RPM	Peak Pointers:	32/64-bit
Other Hardware:	None	Other Software:	SmartHeap 8.0 32-bit Library for Linux

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
401.bzip2	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
403.gcc	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
429.mcf	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
445.gobmk	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
456.hmmer	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
458.sjeng	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
462.libquantum	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
464.h264ref	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
471.omnetpp	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
473.astar	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
483.xalancbmk	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC

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

Operating System Notes

```
'ulimit -s unlimited' used to set environment stack size
'ulimit -l 4915200' was used to set environment lock pages quantity
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=2400 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Environment variable PGI_HUGE_PAGES set to 150
```

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General Notes

```
The tested system can be assembled using a
PC Power & Cooling T1KWSR 1000W Turbo-C[illegible] 12V power supply.
```

Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

Base Portability Flags

400.perlbench: -DSPEC_CPU_[illegible]64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPE[illegible]CPU_LP64
403.gcc: -DSPEC_[illegible]PU_LP64
429.mcf: -D[illegible]EC_CPU_LP64
445.gobmk: -DSPE[illegible]CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h26[illegible]ef: -DSPEC_CPU_LP64
[illegible]: -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

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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`

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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: -Mpfi(pass 1) -Mpfo(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:Ofast

429.mcf: -fastsse -Mipa=fast -Mipa=inline:1 -Msmartalloc=huge:420
-tp barcelona -Bstatic_pgi

445.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off
-WOPT:retype_expr=on

-fast -Msmartalloc=huge:448 -Mfprelaxed -Msafeptr
-Mipa=const -Mipa=ptr -Mipa=arg -tp barcelona-64
-Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline:1(pass 2)
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast
-Msmartalloc=huge:448 -Mfprelaxed -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 -OPT:unroll_times_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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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 other inquiries, please contact webmaster@spec.org.

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