



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = **NC**

IBM System x3455 (AMD Opteron 2347)

SPECint_rate_base2006 = **NC**

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.

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

Non-Compliant

Hardware

CPU Name: AMD Opteron 2347
CPU Characteristics:
CPU MHz: 1900
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

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
PathScale Compiler Suite, Release 3.0
Auto Parallel: No
File System: ReiserFS

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Secondary Cache: 512 KB I+D on chip per core
L3 Cache: 2 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (8 x 2GB, DDR2-667 CL5 ECC Reg Dual Rank)
Disk Subsystem: 1 x 160 GB Serial ATA, 7200 RPM
Other Hardware: None

System state: Multi-user, run level 3
File Pointers: 32/64-bit
Pointer Pointers: 32/64-bit
Other software: SmartHeap 8.0 32-bit Library for Linux

Result Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
400.perlbench	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
401.bzip2	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
403.gcc	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
429.mcf	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
445.gobmk	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
456.hmmer	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
458.sjeng	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
462.libquantum	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
464.h264ref	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
471.omnetpp	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
473.astar	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
483.xal	8	NC	NC	NC	NC	NC	NC	8	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' 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

-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.xalanbmk: 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.xalanbmk: -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:fast

429.mcf: -fastsse -Mipa=fast -Mipa=inline:1 -Msmartalloc=huge:420
-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
-Werror:retype_expr=on

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

442.fjeng: -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 -O3 -funroll-times_max=8
-L/cpu2006/workdir/2006/SmartHeap -lsmartheap

Peak Other Flags

C benchmarks (except as noted below):
-w

400.perlbench: No flags used

403.gcc: No flags used

445.gcbmk: No flags used

445.gcc: 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 using 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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