



# SPEC<sup>®</sup> CINT2006 Result

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Supermicro

(Test Sponsor: Advanced Micro Devices)

SPECint<sup>®</sup>\_rate2006 = **NC**

Supermicro H8DMU+, AMD Opteron 2356

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.**

	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 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

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  
L3 Cache: 2 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (8x2GB, DDR2-667 CL5 Reg Dual Rank)  
Disk Subsystem: 1x400GB SATA, 7200 RPM  
Other Hardware: None

Auto Parallel: No  
File System: ReiserFS  
System State: Multi-user, run level 3  
Base Printers: 32/64-bit  
Peak Printers: 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' 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



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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.gobmp: -DSPEC\_CPU\_LP64  
466.hmm: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
483.lbm: -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.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  
-Mipr: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/2007/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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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