



# SPEC® CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

SPECint®\_rate2006 = 108

n4250QE (S4985) AMD Opteron 8222 SE

SPECint\_rate\_base2006 = 93.9

CPU2006 license: 49

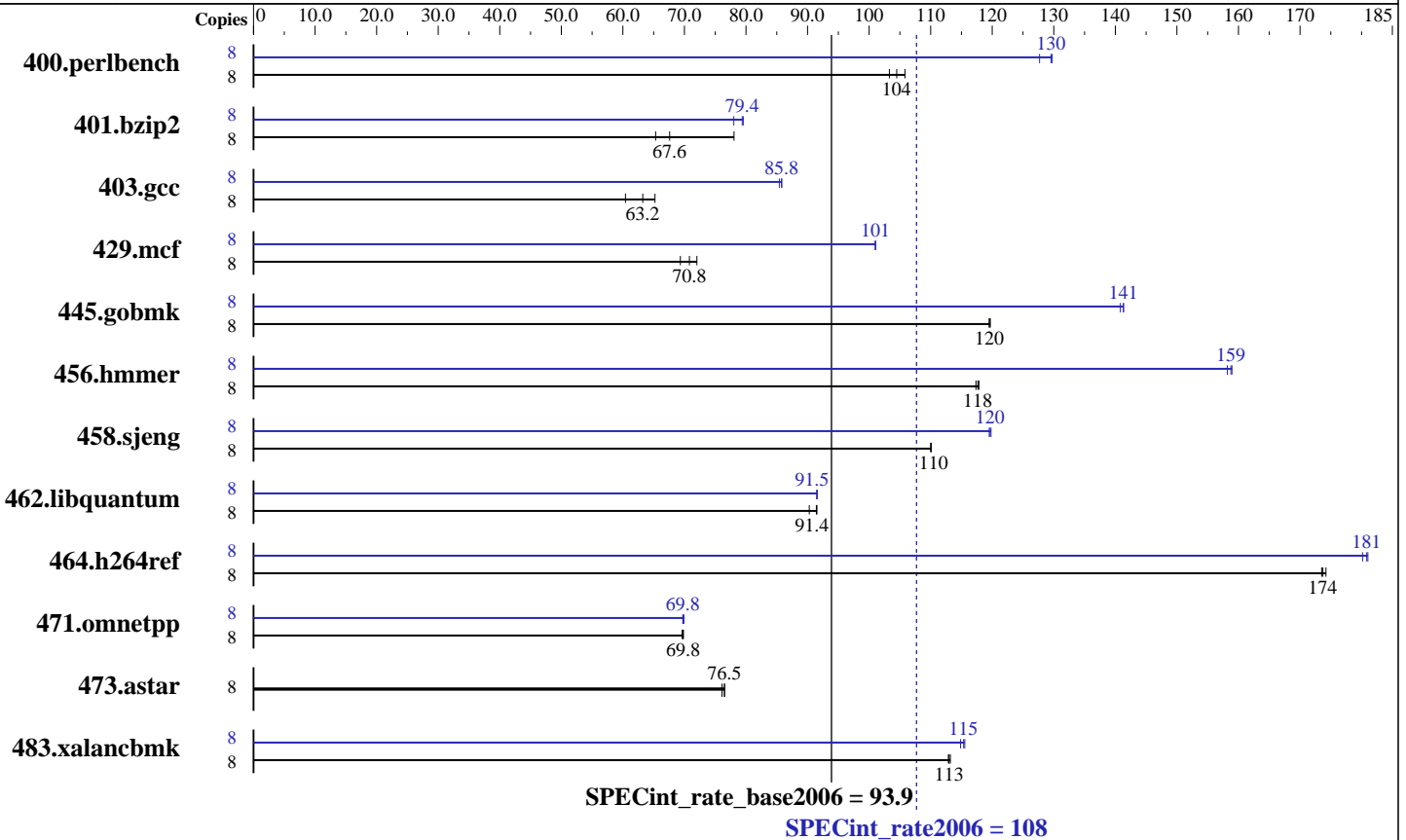
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Mar-2007

Hardware Availability: May-2007

Software Availability: Feb-2007



## Hardware

CPU Name: AMD Opteron 8222 SE  
 CPU Characteristics:  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 1,2,4 chips  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (16x1GB, DDR2-667 CL5 ECC Reg Dual Rank)  
 Disk Subsystem: SATA, 250 GB  
 Other Hardware: None

## Software

Operating System: SuSE Linux Enterprise Server 10 64-bit kernel  
 Compiler: QLogic PathScale Compiler Suite, Release 3.0  
 Auto Parallel: No  
 File System: ext3  
 System State: Multi-user, run level 3  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap 8.0 32 bit Library for Linux



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	757	103	<b>748</b>	<b>104</b>	739	106	8	612	128	<b>603</b>	<b>130</b>	602	130
401.bzip2	8	1182	65.3	<b>1142</b>	<b>67.6</b>	989	78.1	8	990	78.0	970	79.6	<b>972</b>	<b>79.4</b>
403.gcc	8	1066	60.4	<b>1018</b>	<b>63.2</b>	988	65.2	8	754	85.4	750	85.8	<b>751</b>	<b>85.8</b>
429.mcf	8	1052	69.3	<b>1030</b>	<b>70.8</b>	1013	72.0	8	722	101	722	101	<b>722</b>	<b>101</b>
445.gobmk	8	702	120	701	120	<b>702</b>	<b>120</b>	8	596	141	594	141	<b>594</b>	<b>141</b>
456.hmmer	8	636	117	<b>634</b>	<b>118</b>	633	118	8	472	158	<b>470</b>	<b>159</b>	470	159
458.sjeng	8	<b>879</b>	<b>110</b>	880	110	879	110	8	810	120	<b>809</b>	<b>120</b>	808	120
462.libquantum	8	1836	90.3	1811	91.5	<b>1813</b>	<b>91.4</b>	8	<b>1811</b>	<b>91.5</b>	1810	91.6	1811	91.5
464.h264ref	8	<b>1019</b>	<b>174</b>	1016	174	1020	174	8	983	180	978	181	<b>979</b>	<b>181</b>
471.omnetpp	8	716	69.8	<b>716</b>	<b>69.8</b>	718	69.6	8	717	69.7	<b>717</b>	<b>69.8</b>	715	69.9
473.astar	8	738	76.1	<b>734</b>	<b>76.5</b>	734	76.5	8	738	76.1	<b>734</b>	<b>76.5</b>	734	76.5
483.xalancbmk	8	489	113	<b>489</b>	<b>113</b>	488	113	8	481	115	478	116	<b>479</b>	<b>115</b>

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

## General Notes

taskset utility used to bind cores to processes  
All memory slots filled on all used CPU sockets

The tested system can be assembled using an SSI-MEB case and a Silverstone Zeus 650 watt ST65ZF ATX 12V Power Supply.

## Base Compiler Invocation

C benchmarks:  
pathcc

C++ benchmarks:  
pathCC

## 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

```

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## Base Portability Flags (Continued)

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-Ofast -OPT:malloc\_alg=1

C++ benchmarks:

-Ofast -m32 -L/cpu2006/mpaton/1.0/amd514K8.lib/32 -lsmartheap

## Peak Compiler Invocation

C benchmarks:

pathcc

C++ benchmarks:

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  
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: -O3 -LNO:ou\_prod\_max=10 -OPT:Ofast -OPT:alias=disjoint

403.gcc: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -m32 -O3  
-OPT:Ofast

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## Peak Optimization Flags (Continued)

429.mcf: -m32 -O3 -ipa  
-L/cpu2006/mpaton/1.0/amd514K8.lib/32 -lsmartheap

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

456.hmmer: -O2 -OPT:alias=disjoint -OPT:malloc\_alg=1 -CG:cflow=0

458.sjeng: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
-IPA:plimit=50000 -IPA:pu\_reorder=2

462.libquantum: -O3 -ipa -CG:local\_fwd\_sched=on -IPA:space=1000

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: -Ofast -CG:gcm=off -m32  
-L/cpu2006/mpaton/1.0/amd514K8.lib/32 -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -Ofast -m32 -OPT:unroll\_times\_max=8  
-L/cpu2006/mpaton/1.0/amd514K8.lib/32 -lsmartheap

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090714.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090714.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.0.  
Report generated on Tue Jul 22 11:35:09 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 1 May 2007.