



# SPEC® CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

SPECint®\_rate2006 = 25.2

Thunder K8QW (S4881) Opteron 890

SPECint\_rate\_base2006 = 22.6

CPU2006 license: 49

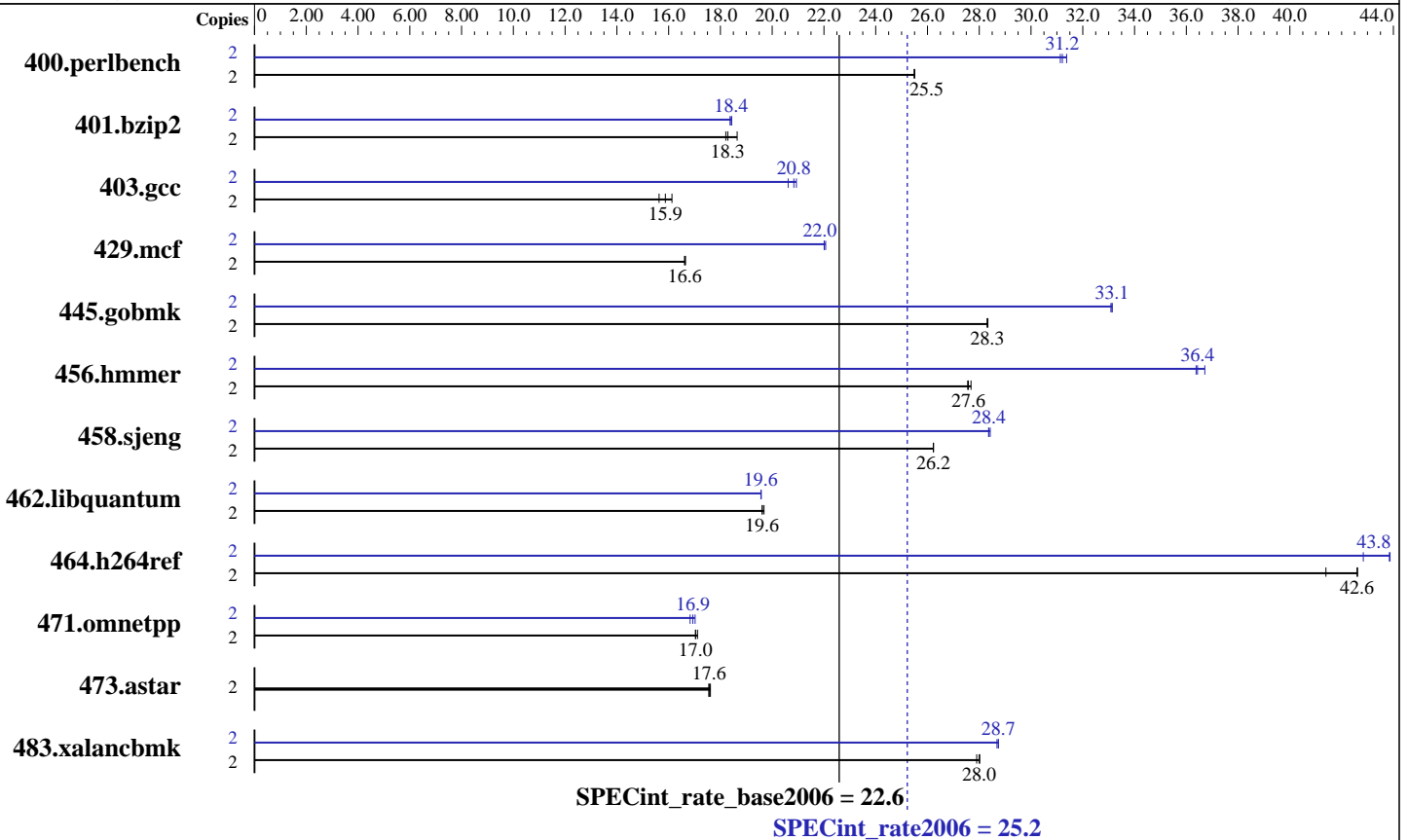
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Apr-2007

Hardware Availability: Feb-2007

Software Availability: Feb-2007



## Hardware

CPU Name: AMD Opteron 890  
 CPU Characteristics:  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 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: 4 GB (4x1GB, DDR-400 CL3 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	2	767	25.5	766	25.5	<b>766</b>	<b>25.5</b>	2	628	31.1	<b>626</b>	<b>31.2</b>	623	31.4
401.bzip2	2	1035	18.6	<b>1055</b>	<b>18.3</b>	1060	18.2	2	1051	18.4	1047	18.4	<b>1048</b>	<b>18.4</b>
403.gcc	2	998	16.1	1030	15.6	<b>1014</b>	<b>15.9</b>	2	769	20.9	781	20.6	<b>773</b>	<b>20.8</b>
429.mcf	2	<b>1097</b>	<b>16.6</b>	1095	16.7	1098	16.6	2	<b>829</b>	<b>22.0</b>	827	22.1	829	22.0
445.gobmk	2	<b>741</b>	<b>28.3</b>	740	28.3	741	28.3	2	634	33.1	<b>633</b>	<b>33.1</b>	633	33.1
456.hmmer	2	674	27.7	677	27.6	<b>677</b>	<b>27.6</b>	2	513	36.4	<b>512</b>	<b>36.4</b>	508	36.7
458.sjeng	2	<b>923</b>	<b>26.2</b>	923	26.2	922	26.2	2	<b>853</b>	<b>28.4</b>	851	28.4	853	28.4
462.libquantum	2	2105	19.7	2113	19.6	<b>2113</b>	<b>19.6</b>	2	<b>2118</b>	<b>19.6</b>	2118	19.6	2117	19.6
464.h264ref	2	1039	42.6	<b>1039</b>	<b>42.6</b>	1069	41.4	2	1033	42.8	1009	43.9	<b>1009</b>	<b>43.8</b>
471.omnetpp	2	734	17.0	730	17.1	<b>734</b>	<b>17.0</b>	2	743	16.8	<b>738</b>	<b>16.9</b>	734	17.0
473.astar	2	800	17.6	797	17.6	<b>799</b>	<b>17.6</b>	2	800	17.6	797	17.6	<b>799</b>	<b>17.6</b>
483.xalancbmk	2	493	28.0	<b>493</b>	<b>28.0</b>	495	27.9	2	480	28.7	<b>480</b>	<b>28.7</b>	481	28.7

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.  
 Memory bank interleave is enabled.  
 The tested system can be assembled using an SSI-MEB case and  
 a Emacs PSL-6701P 700 watt 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).

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