



# SPEC® CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

SPECint®\_rate2006 = 97.6

Tyan n4250QE (S4985) AMD Opteron 8220

SPECint\_rate\_base2006 = 86.2

CPU2006 license: 49

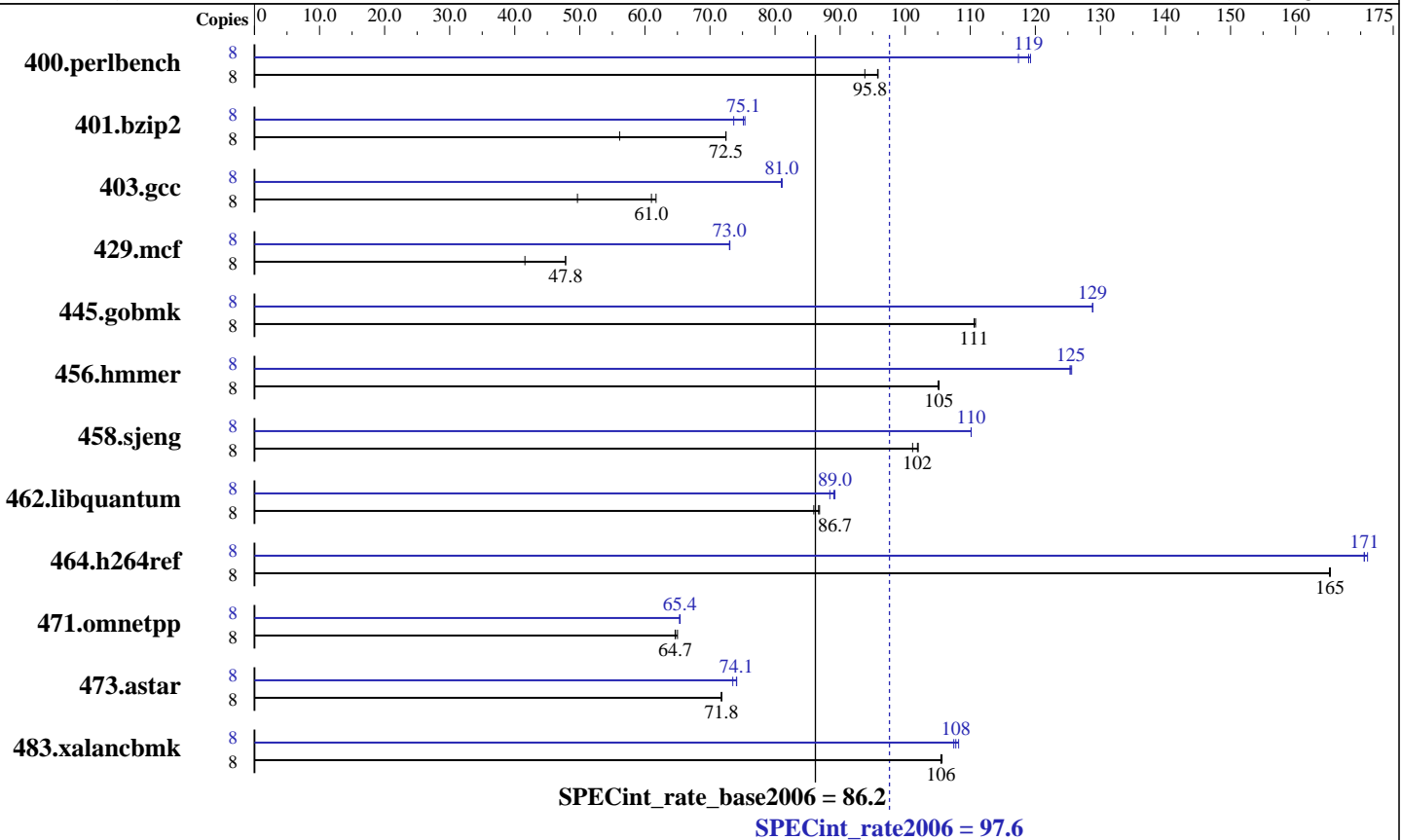
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Jul-2006

Hardware Availability: Feb-2007

Software Availability: Aug-2006



## Hardware

CPU Name: AMD Opteron 8220  
 CPU Characteristics:  
 CPU MHz: 2800  
 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 CL4 ECC Reg Dual Rank)  
 Disk Subsystem: SATA, 74 GB  
 Other Hardware: None

## Software

Operating System: SuSE SLES9SP3 64-bit kernel  
 Compiler: QLogic PathScale Compiler Suite, Release 2.5  
 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	833	93.8	<b>816</b>	<b>95.8</b>	816	95.8	8	666	117	655	119	<b>657</b>	<b>119</b>
401.bzip2	8	1376	56.1	<b>1066</b>	<b>72.5</b>	1065	72.5	8	1048	73.7	<b>1027</b>	<b>75.1</b>	1024	75.4
403.gcc	8	1297	49.6	<b>1056</b>	<b>61.0</b>	1044	61.7	8	795	81.0	<b>795</b>	<b>81.0</b>	794	81.1
429.mcf	8	1755	41.6	<b>1526</b>	<b>47.8</b>	1526	47.8	8	<b>999</b>	<b>73.0</b>	999	73.0	999	73.1
445.gobmk	8	757	111	<b>759</b>	<b>111</b>	759	111	8	651	129	<b>652</b>	<b>129</b>	652	129
456.hmmer	8	709	105	710	105	<b>710</b>	<b>105</b>	8	594	126	<b>595</b>	<b>125</b>	596	125
458.sjeng	8	957	101	<b>950</b>	<b>102</b>	949	102	8	879	110	879	110	<b>879</b>	<b>110</b>
462.libquantum	8	<b>1912</b>	<b>86.7</b>	1928	86.0	1909	86.8	8	1875	88.4	<b>1862</b>	<b>89.0</b>	1858	89.2
464.h264ref	8	1072	165	1071	165	<b>1071</b>	<b>165</b>	8	1038	171	1035	171	<b>1038</b>	<b>171</b>
471.omnetpp	8	773	64.6	769	65.0	<b>773</b>	<b>64.7</b>	8	764	65.4	<b>765</b>	<b>65.4</b>	765	65.3
473.astar	8	783	71.7	<b>782</b>	<b>71.8</b>	782	71.8	8	764	73.5	<b>758</b>	<b>74.1</b>	758	74.1
483.xalanbmk	8	<b>523</b>	<b>106</b>	523	105	522	106	8	<b>512</b>	<b>108</b>	510	108	514	107

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

## General Notes

taskset utility used to bind CPU(s) to processes  
 All memory slots filled on all used CPU sockets  
 The tested system can be assembled using any 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  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

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## Base Portability Flags (Continued)

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

## Base Optimization Flags

C benchmarks:

-Ofast

C++ benchmarks:

-Ofast -m32

-L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap

## Base Other Flags

C benchmarks:

-IPA:max\_jobs=2

C++ benchmarks:

-IPA:max\_jobs=2

## 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.hmmmer: -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



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## Peak Optimization Flags

C benchmarks:

```

400.perlbench: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
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
429.mcf: -m32 -O2 -ipa
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -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.hmmmer: -O2 -OPT:alias=disjoint -WOPT:aggstr=0 -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 -IPA:pu_reorder=2 -CG:gcm=off -m32
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap
473.astar: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
        -m32
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap
483.xalancbmk: -Ofast -m32 -OPT:unroll_times_max=8
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap

```

## Peak Other Flags

C benchmarks:

-IPA:max\_jobs=2

C++ benchmarks:

-IPA:max\_jobs=2



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[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090714.25.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.25.html)

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090714.25.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.25.xml)

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