# SPEC® CINT2006 Result

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## Supermicro

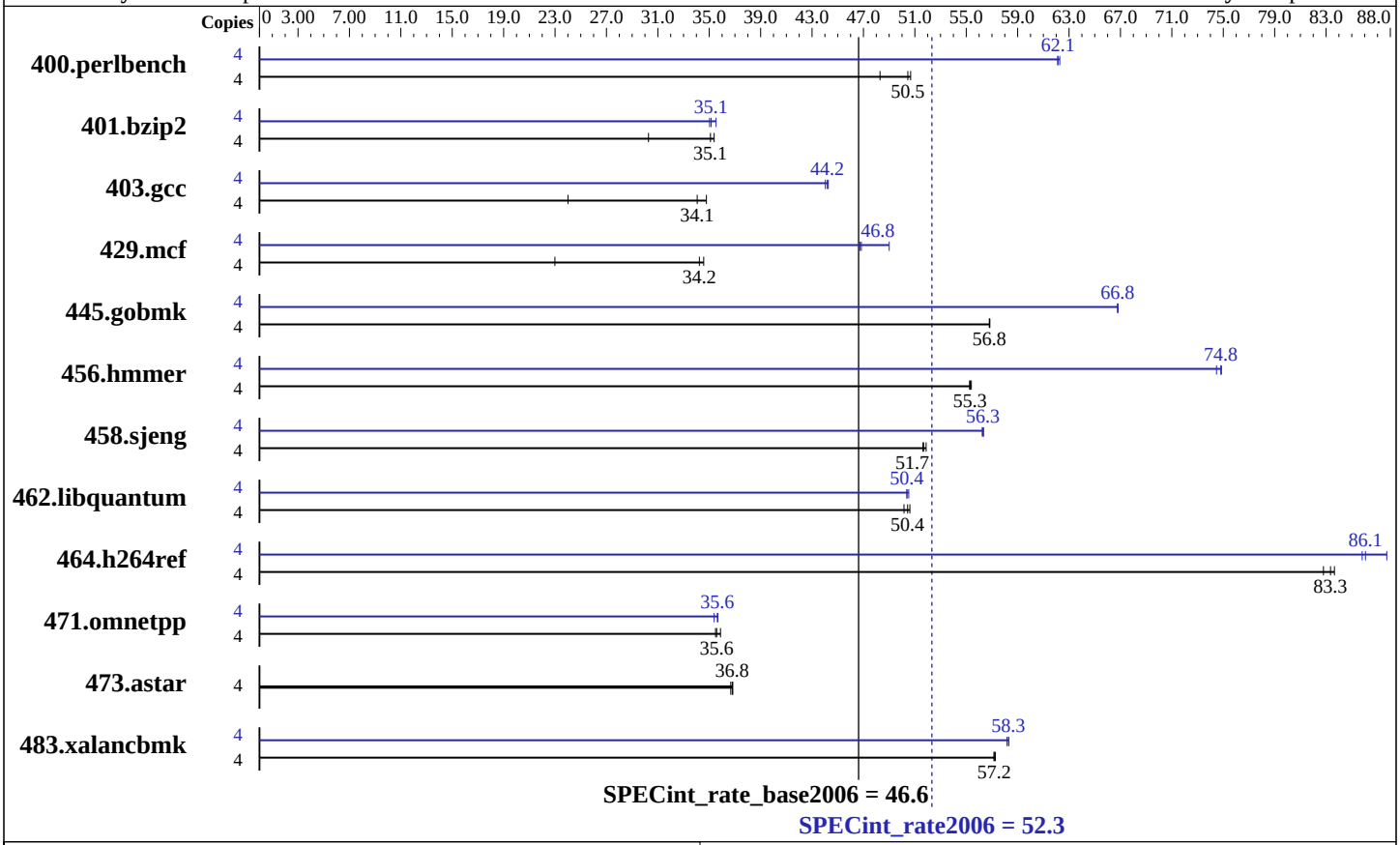
## Motherboard H8DMR-82 AMD Opteron 2220

SPECint®_rate2006 = 52.3

SPECint_rate_base2006 = 46.6

**CPU2006 license:** 001176
**Test sponsor:** Supermicro
**Tested by:** Supermicro

**Test date:** Sep-2007
**Hardware Availability:** Oct-2006
**Software Availability:** Apr-2007




### Hardware

| | |
|---|---|
| CPU Name: | AMD Opteron 2220 |
| CPU Characteristics: | |
| CPU MHz: | 2800 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 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 (8x2GB, PC2-5300 CL5 ECC Reg Dual Rank) |
| Disk Subsystem: | SATA, 250 GB |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 10 SP1 64-bit kernel |
| Compiler: | The Portland Group (PGI)<br>PGI pgcc 7.1-0 C Compiler<br>PGI pgCC 7.1-0 C++ Compiler<br>PathScale Compiler Suite, Release 3.0 |
| Auto Parallel: | No |
| File System: | ReiserFS |
| System State: | Multi-user, run level 2 |
| 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 | 4 | 809 | 48.3 | **775** | **50.5** | 771 | 50.7 | 4 | 629 | 62.1 | 628 | 62.3 | **629** | **62.1** |
| 401.bzip2 | 4 | 1275 | 30.3 | **1100** | **35.1** | 1091 | 35.4 | 4 | 1086 | 35.5 | 1102 | 35.0 | **1098** | **35.1** |
| 403.gcc | 4 | 1341 | 24.0 | **945** | **34.1** | 926 | 34.8 | 4 | 727 | 44.3 | 731 | 44.0 | **729** | **44.2** |
| 429.mcf | 4 | 1587 | 23.0 | **1066** | **34.2** | 1055 | 34.6 | 4 | 744 | 49.0 | 781 | 46.7 | **779** | **46.8** |
| 445.gobmk | 4 | **739** | **56.8** | 739 | 56.8 | 738 | 56.8 | 4 | 628 | 66.8 | 628 | 66.8 | **628** | **66.8** |
| 456.hmmer | 4 | **675** | **55.3** | 675 | 55.3 | 674 | 55.4 | 4 | 501 | 74.5 | **499** | **74.8** | 499 | 74.9 |
| 458.sjeng | 4 | **937** | **51.7** | 933 | 51.9 | 937 | 51.6 | 4 | 859 | 56.3 | **860** | **56.3** | 861 | 56.2 |
| 462.libquantum | 4 | 1652 | 50.2 | 1638 | 50.6 | **1643** | **50.4** | 4 | 1645 | 50.4 | 1640 | 50.5 | **1645** | **50.4** |
| 464.h264ref | 4 | **1062** | **83.3** | 1058 | 83.7 | 1069 | 82.8 | 4 | 1009 | 87.7 | 1032 | 85.8 | **1029** | **86.1** |
| 471.omnetpp | 4 | 697 | 35.9 | 704 | 35.5 | **703** | **35.6** | 4 | 701 | 35.7 | **702** | **35.6** | 707 | 35.4 |
| 473.astar | 4 | 766 | 36.7 | 762 | 36.8 | **763** | **36.8** | 4 | 766 | 36.7 | 762 | 36.8 | **763** | **36.8** |
| 483.xalancbmk | 4 | 483 | 57.2 | 482 | 57.3 | **483** | **57.2** | 4 | 473 | 58.3 | **474** | **58.3** | 475 | 58.2 |

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

## Operating System Notes

```
Environment stack size set to 'unlimited'
PGI_HUGE_PAGES set to 896.
Total number of huge pages available is 7168.
```

## General Notes

```
Product description located as of
http://www.supermicro.com/Aplus/motherboard/Opteron2000/MCP55/H8DMR-82.cfm
taskset was used to bind processes to cores
```

## 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`

Continued on next page

## Base Portability Flags (Continued)

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

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

Continued on next page

## Peak Optimization Flags (Continued)

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 -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.20090714.06.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.06.xml`


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For other inquiries, please contact webmaster@spec.org.

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