# SPEC® CINT2006 Result
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## Fujitsu Siemens Computers

PRIMERGY RX330 S1, AMD Opteron 2222, 3.0 GHz

SPECint®_rate2006 =　56.1

SPECint_rate_base2006 = 50.3

**CPU2006 license:** 22

**Test sponsor:** Fujitsu Siemens Computers

**Tested by:** Fujitsu Siemens Computers

**Test date:** Jun-2007

**Hardware Availability:** Aug-2007

**Software Availability:** Mar-2007



SPECint_rate_base2006 = 50.3

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## Hardware

| | |
|---|---|
| CPU Name: | AMD Opteron 2222 |
| CPU Characteristics: | 2222 |
| CPU MHz: | 3000 |
| 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 (8x2 GB DDR2 PC2-5300P, 2 rank, CAS 5-5-5, with ECC) |
| Disk Subsystem: | Seagate ST336754SS (SAS, 36GB, 15000rpm) |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SLES 10 for AMD64/EM64T |
| Compiler: | QLogic PathScale Compiler Suite, - Release 3.0 |
| Auto Parallel: | No |
| File System: | ReiserFS |
| System State: | Multi-user run level 3 |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap 8.1 |

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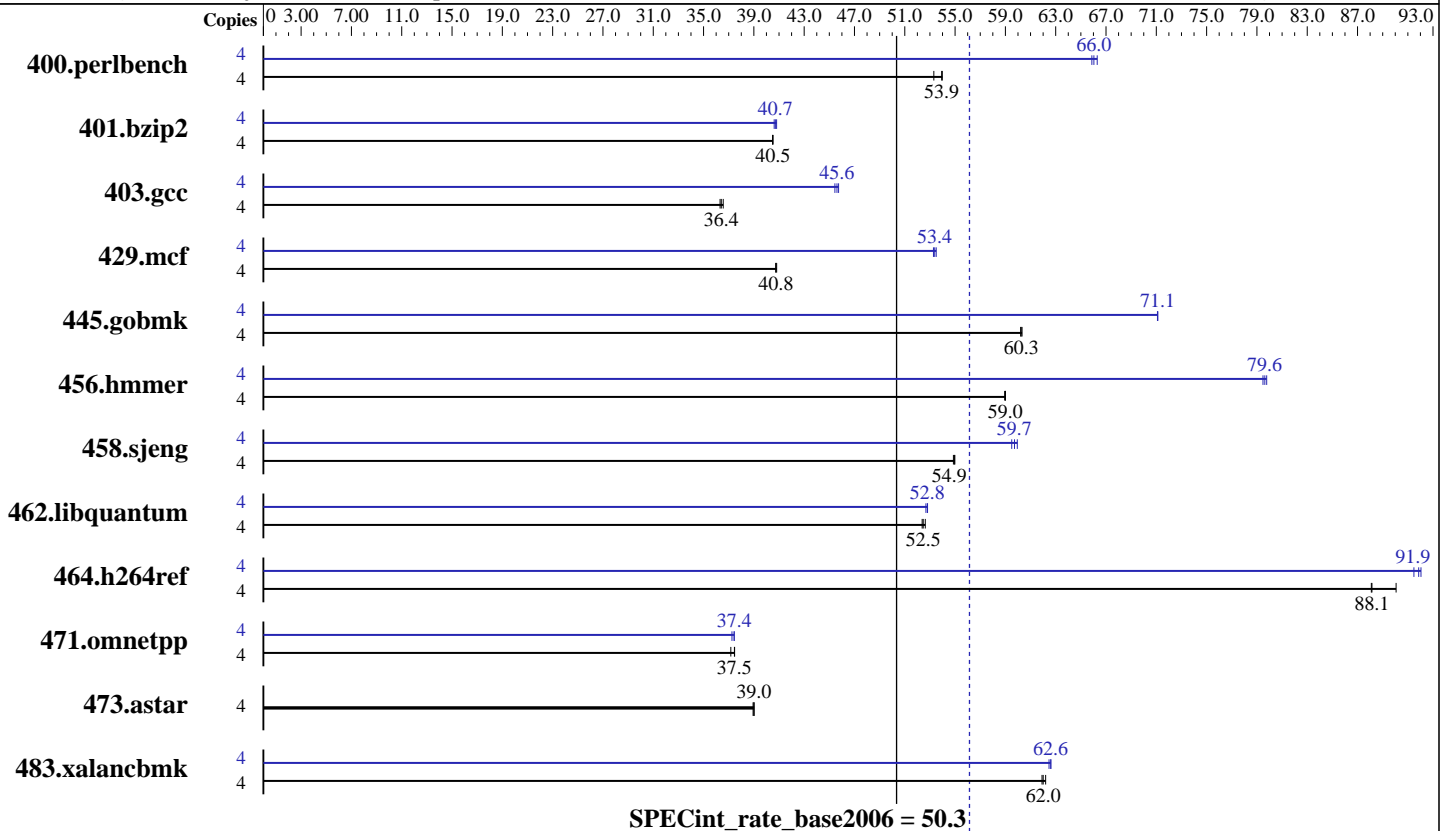| | | |
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## Results Table

| Benchmark | Base Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Peak Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400.perlbench | 4 | 733 | 53.3 | **725** | **53.9** | 724 | 54.0 | 4 | 589 | 66.3 | 593 | 65.9 | **592** | **66.0** |
| 401.bzip2 | 4 | 953 | 40.5 | 953 | 40.5 | **953** | **40.5** | 4 | **948** | **40.7** | 946 | 40.8 | 950 | 40.6 |
| 403.gcc | 4 | 881 | 36.6 | **884** | **36.4** | 887 | 36.3 | 4 | **706** | **45.6** | 704 | 45.7 | 709 | 45.4 |
| 429.mcf | 4 | 894 | 40.8 | **895** | **40.8** | 895 | 40.7 | 4 | **683** | **53.4** | 682 | 53.5 | 685 | 53.3 |
| 445.gobmk | 4 | 696 | 60.3 | **696** | **60.3** | 697 | 60.2 | 4 | 590 | 71.1 | 590 | 71.1 | **590** | **71.1** |
| 456.hmmer | 4 | 632 | 59.0 | **633** | **59.0** | 633 | 58.9 | 4 | 470 | 79.5 | 468 | 79.8 | **469** | **79.6** |
| 458.sjeng | 4 | **881** | **54.9** | 882 | 54.9 | 880 | 55.0 | 4 | 813 | 59.5 | 807 | 59.9 | **810** | **59.7** |
| 462.libquantum | 4 | 1575 | 52.6 | **1580** | **52.5** | 1582 | 52.4 | 4 | 1573 | 52.7 | **1570** | **52.8** | 1569 | 52.8 |
| 464.h264ref | 4 | 1005 | 88.1 | 983 | 90.1 | **1004** | **88.1** | 4 | 968 | 91.5 | 962 | 92.0 | **964** | **91.9** |
| 471.omnetpp | 4 | 667 | 37.5 | **667** | **37.5** | 673 | 37.2 | 4 | **668** | **37.4** | 668 | 37.4 | 671 | 37.3 |
| 473.astar | 4 | 720 | 39.0 | 721 | 38.9 | **720** | **39.0** | 4 | 720 | 39.0 | 721 | 38.9 | **720** | **39.0** |
| 483.xalancbmk | 4 | 444 | 62.2 | **445** | **62.0** | 446 | 61.9 | 4 | 441 | 62.6 | **441** | **62.6** | 442 | 62.5 |

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'numactl' and 'taskset' have been used to bind processes to CPUs
```

## General Notes

```
BIOS settings:
Node Interleave = disabled

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http://www.fujitsu-siemens.com/countries
```

## Base Compiler Invocation

C benchmarks:
    pathcc

C++ benchmarks:
    pathCC

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## 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
  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/opt/SmartHeap_8.1/lib -lsmartheap
```

## Base Other Flags

C benchmarks:
```
-IPA:max_jobs=4
```

C++ benchmarks:
```
-IPA:max_jobs=4
```

## 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
```

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# Peak Portability Flags (Continued)

```
    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

       429.mcf: -m32 -O3 -ipa -L/opt/SmartHeap_8.1/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.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/opt/SmartHeap_8.1/lib -lsmartheap

      473.astar: basepeak = yes

  483.xalancbmk: -Ofast -m32 -OPT:unroll_times_max=8
               -L/opt/SmartHeap_8.1/lib -lsmartheap
```

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# Peak Other Flags

C benchmarks:
        -IPA:max_jobs=4

C++ benchmarks:
        -IPA:max_jobs=4

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.10.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.10.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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