# SPEC® CINT2006 Result
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## Fujitsu Siemens Computers

CELSIUS V840, Opteron 2222, 64-bit Linux
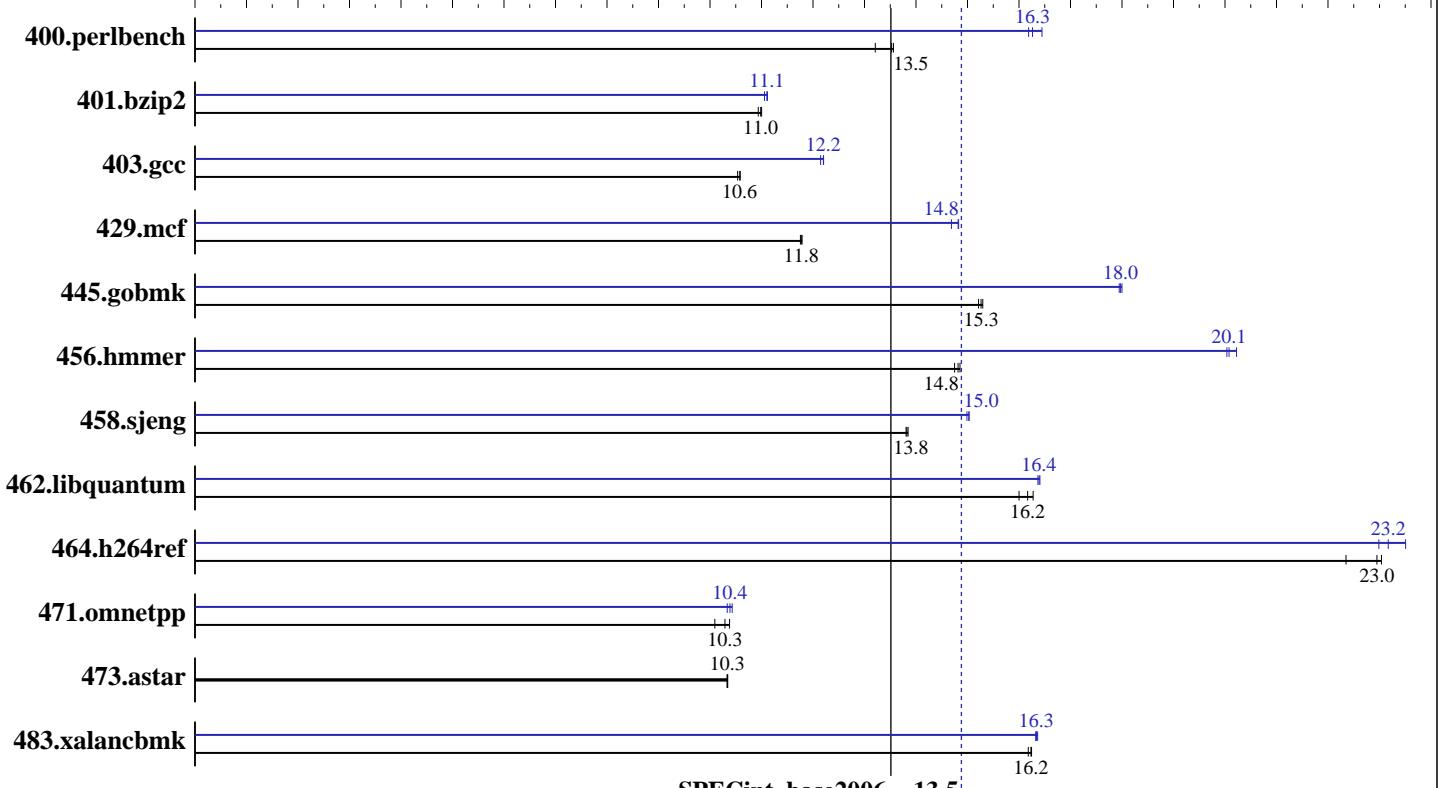
SPECint®2006 = 14.9

SPECint_base2006 = 13.5

| | |
|---|---|
| 400.perlbench | 16.3 / 13.5 |
| 401.bzip2 | 11.1 / 11.0 |
| 403.gcc | 12.2 / 10.6 |
| 429.mcf | 14.8 / 11.8 |
| 445.gobmk | 18.0 / 15.3 |
| 456.hmmer | 20.1 / 14.8 |
| 458.sjeng | 15.0 / 13.8 |
| 462.libquantum | 16.4 / 16.2 |
| 464.h264ref | 23.2 / 23.0 |
| 471.omnetpp | 10.4 / 10.3 |
| 473.astar | 10.3 |
| 483.xalancbmk | 16.3 / 16.2 |

SPECint_base2006 = 13.5
SPECint2006 = 14.9

## Hardware

| | |
|---|---|
| CPU Name: | AMD Opteron 2222 |
| CPU Characteristics: | Dual Core, 3.0 GHz, 2 MB L2-cache |
| 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 (8x2GB DDR2-667 CL5 dual rank ECC DIMMs registered) |
| Disk Subsystem: | SATA II, 80 GB |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SLES 10 for AMD64/EM64T |
| Compiler: | QLogic PathScale Compiler Suite, - Release 3.0 |
| Auto Parallel: | No |
| File System: | ext3 |
| System State: | Multi-User SuSE Run Level 3 |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap 8.1 |

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**CPU2006 license:** 22
**Test sponsor:** Fujitsu Siemens Computers
**Tested by:** Fujitsu Siemens Computers

**Test date:** Jul-2007
**Hardware Availability:** Jul-2007
**Software Availability:** Mar-2007

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 740 | 13.2 | 720 | 13.6 | **722** | **13.5** | **601** | **16.3** | 604 | 16.2 | 594 | 16.4 |
| 401.bzip2 | 882 | 10.9 | 877 | 11.0 | **879** | **11.0** | **869** | **11.1** | 868 | 11.1 | 873 | 11.1 |
| 403.gcc | 760 | 10.6 | **761** | **10.6** | 764 | 10.5 | 660 | 12.2 | **660** | **12.2** | 663 | 12.1 |
| 429.mcf | 776 | 11.8 | 774 | 11.8 | **775** | **11.8** | 615 | 14.8 | **615** | **14.8** | 621 | 14.7 |
| 445.gobmk | 686 | 15.3 | **687** | **15.3** | 689 | 15.2 | 585 | 17.9 | 583 | 18.0 | **584** | **18.0** |
| 456.hmmer | 628 | 14.9 | 633 | 14.7 | **630** | **14.8** | 461 | 20.2 | 466 | 20.0 | **465** | **20.1** |
| 458.sjeng | 874 | 13.8 | 876 | 13.8 | **875** | **13.8** | 805 | 15.0 | 807 | 15.0 | **805** | **15.0** |
| 462.libquantum | 1295 | 16.0 | **1282** | **16.2** | 1273 | 16.3 | 1263 | 16.4 | 1266 | 16.4 | **1264** | **16.4** |
| 464.h264ref | 990 | 22.3 | 961 | 23.0 | **964** | **23.0** | 963 | 23.0 | **955** | **23.2** | 941 | 23.5 |
| 471.omnetpp | **607** | **10.3** | 602 | 10.4 | 619 | 10.1 | 599 | 10.4 | 605 | 10.3 | **602** | **10.4** |
| 473.astar | 680 | 10.3 | **679** | **10.3** | 679 | 10.3 | 680 | 10.3 | **679** | **10.3** | 679 | 10.3 |
| 483.xalancbmk | **425** | **16.2** | 425 | 16.2 | 426 | 16.2 | 422 | 16.4 | 423 | 16.3 | **422** | **16.3** |

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

## Operating System Notes

```
powersave -f is applied to set CPU to maximum frequency prior to run
stacksize is set to unlimited prior to run
```

## General Notes

```
BIOS default settings with
Node memory interleave disabled, SRAT enabled

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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.20090714.28.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.28.xml

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