



SPEC® CINT2006 Result

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Fujitsu Siemens Computers

SPECint®_rate2006 = 102

CELSIUS V840, AMD Opteron 2356 (2.3 GHz)

SPECint_rate_base2006 = 87.4

CPU2006 license: 22

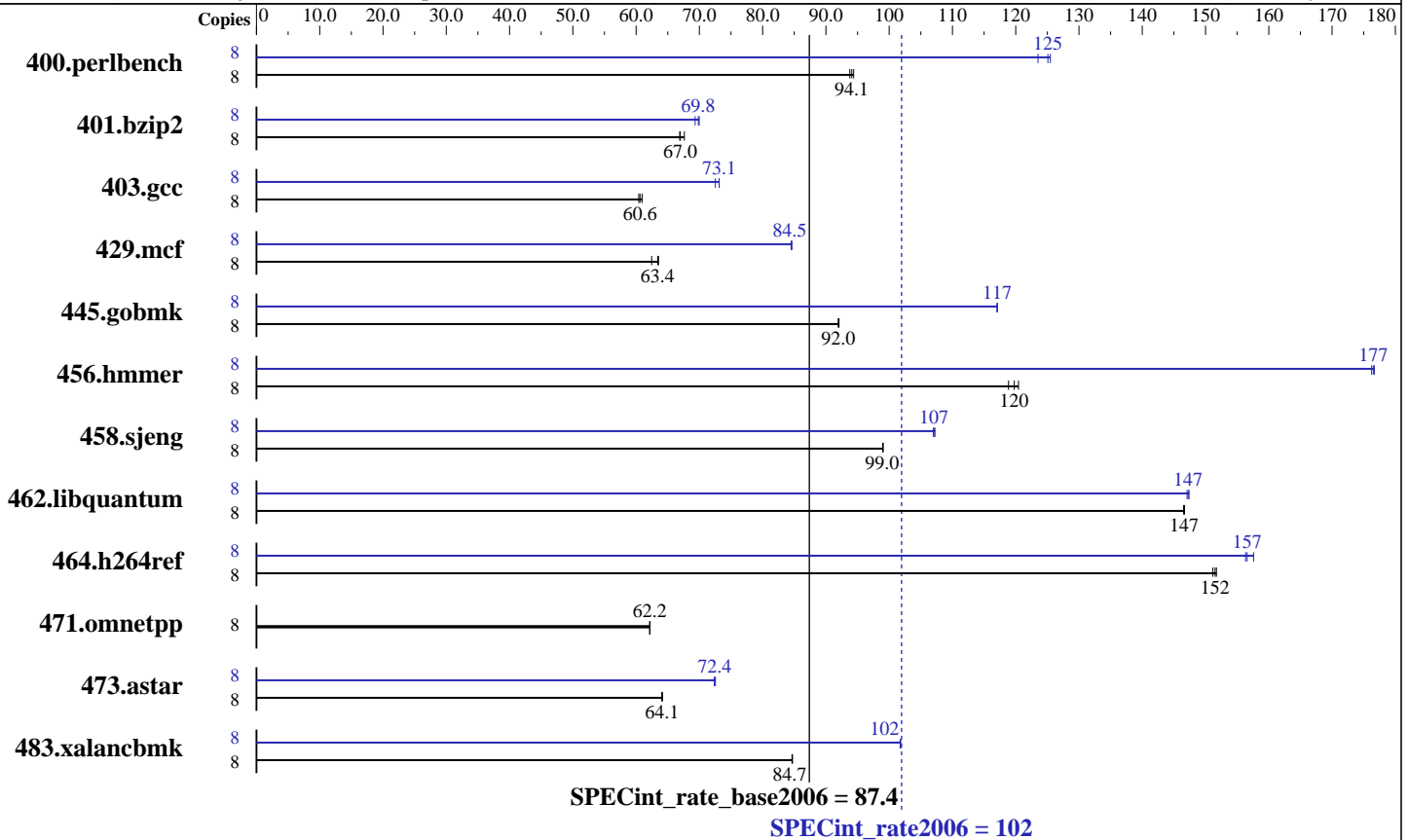
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Apr-2008

Hardware Availability: May-2008

Software Availability: May-2008



Hardware

CPU Name: AMD Opteron 2356
 CPU Characteristics:
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 2 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (8x2GB PC2-5300P, CL5, dual rank ECC)
 Disk Subsystem: 1 x 400 GB SATA II, 7200 rpm
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: PGI Server Complete Version 7.2, PathScale Compiler Suite, Release Pre-3.2 Beta
 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: binutils 2.18.50, Microquill SmartHeap 8.1 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	828	94.4	833	93.8	831	94.1	8	633	124	625	125	623	125
401.bzip2	8	1142	67.6	1153	67.0	1154	66.9	8	1114	69.3	1106	69.8	1103	70.0
403.gcc	8	1057	61.0	1062	60.6	1066	60.4	8	888	72.5	880	73.1	881	73.1
429.mcf	8	1168	62.5	1148	63.5	1150	63.4	8	863	84.5	863	84.5	862	84.6
445.gobmk	8	912	92.0	911	92.1	912	92.0	8	717	117	717	117	717	117
456.hammer	8	620	120	623	120	628	119	8	422	177	423	176	423	177
458.sjeng	8	978	99.0	977	99.0	978	99.0	8	903	107	905	107	904	107
462.libquantum	8	1130	147	1131	147	1131	147	8	1126	147	1127	147	1125	147
464.h264ref	8	1169	152	1171	151	1167	152	8	1131	157	1133	156	1123	158
471.omnetpp	8	805	62.1	804	62.2	804	62.2	8	805	62.1	804	62.2	804	62.2
473.astar	8	875	64.2	876	64.1	876	64.1	8	776	72.4	775	72.4	774	72.5
483.xalancbmk	8	652	84.6	652	84.7	652	84.7	8	543	102	542	102	542	102

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
ulimit -l 2457600
PGI_HUGE_PAGES set to 150
(Total number of huge pages available is 1200)

```

General Notes

The command numactl has been used to bind processes to CPUs

For information about Fujitsu Siemens Computers please see:
<http://www.fujitsu-siemens.com>

Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp



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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:

```

-fastsse -Msmartalloc=huge:150 -Mfprelaxed -Mipa=jobs:4 -Mipa=fast
-Mipa=inline -tp barcelona-64 -Bstatic_pgi

```

C++ benchmarks:

```

-fastsse -Msmartalloc=huge:150 -Mfprelaxed --zc_eh -Mipa=jobs:4
-Mipa=fast -Mipa=inline -tp barcelona -Bstatic_pgi

```

Peak Compiler Invocation

C benchmarks (except as noted below):

pgcc

400.perlbench: pathcc

403.gcc: pathcc

445.gobmk: pathcc

464.h264ref: pathcc

C++ benchmarks (except as noted below):

pgcpp

483.xalancbmk: pathCC

Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64

```

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Peak Portability Flags (Continued)

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: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -Ofast -IPA:plimit=20000 -LNO:opt=0
 -WOPT:if_conv=0 -CG:local_sched_alg=1

401.bzip2: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2) -fastsse -O4
 -Msmartalloc=huge:150 -Mprefetch=t0 -Mnounroll
 -tp barcelona-64 -Bstatic_pgi

403.gcc: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -O3 -OPT:Ofast -m32

429.mcf: -fastsse -Msmartalloc=huge:150 -Mipa=jobs:4 -Mipa=fast
 -Mipa=inline:1 -tp barcelona -Bstatic_pgi

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict
 -LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

456.hmmer: -fastsse -Mvect=partial -Munroll=n:8 -Msmartalloc=huge:150
 -Msafeptr -Mprefetch=t0 -Mfprelaxed -Mipa=jobs:4
 -Mipa=const -Mipa=ptr -Mipa=arg -Mipa=inline
 -tp barcelona-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
 -Mipa=fast(pass 2) -Mipa=inline:1(pass 2)
 -Mipa=noarg(pass 2) -fastsse -Msmartalloc=huge:150
 -Mfprelaxed -tp barcelona-64 -Bstatic_pgi

462.libquantum: -fastsse -Munroll=m:8 -Msmartalloc=huge:150
 -Mprefetch=distance:4 -Mfprelaxed -Mipa=jobs:4 -Mipa=fast
 -Mipa=inline -Mipa=noarg -tp barcelona-64 -Bstatic_pgi

464.h264ref: -march=barcelona -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -O3 -IPA:plimit=20000
 -OPT:alias=disjoint -LNO:prefetch=0 -CG:ptr_load_use=0
 -CG:push_pop_int_saved_regs=off

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
-Mipa=fast(pass 2) -Mipa=inline:6(pass 2) -fastsse -O4
-Msmartalloc=huge:150 -Msafeptr=global -Mfprelaxed --zc_eh
-tp barcelona -Bstatic_pgi

483.xalancbmk: -march=barcelona -Ofast -OPT:unroll_times_max=8
-CG:push_pop_int_saved_regs=off -CG:ptr_load_use=0 -m32
-lsmartheap

Peak Other Flags

C++ benchmarks:

483.xalancbmk: -L/opt/SmartHeap_8.1/lib

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/fsc-mix-pgi-path.20090714.html>

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

<http://www.spec.org/cpu2006/flags/fsc-mix-pgi-path.20090714.xml>

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

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