



SPEC® CINT2006 Result

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Fujitsu Siemens Computers

SPECint®_rate2006 = 92.4

CELSIUS V840, AMD Opteron 2350 (2.0 GHz)

SPECint_rate_base2006 = 79.3

CPU2006 license: 22

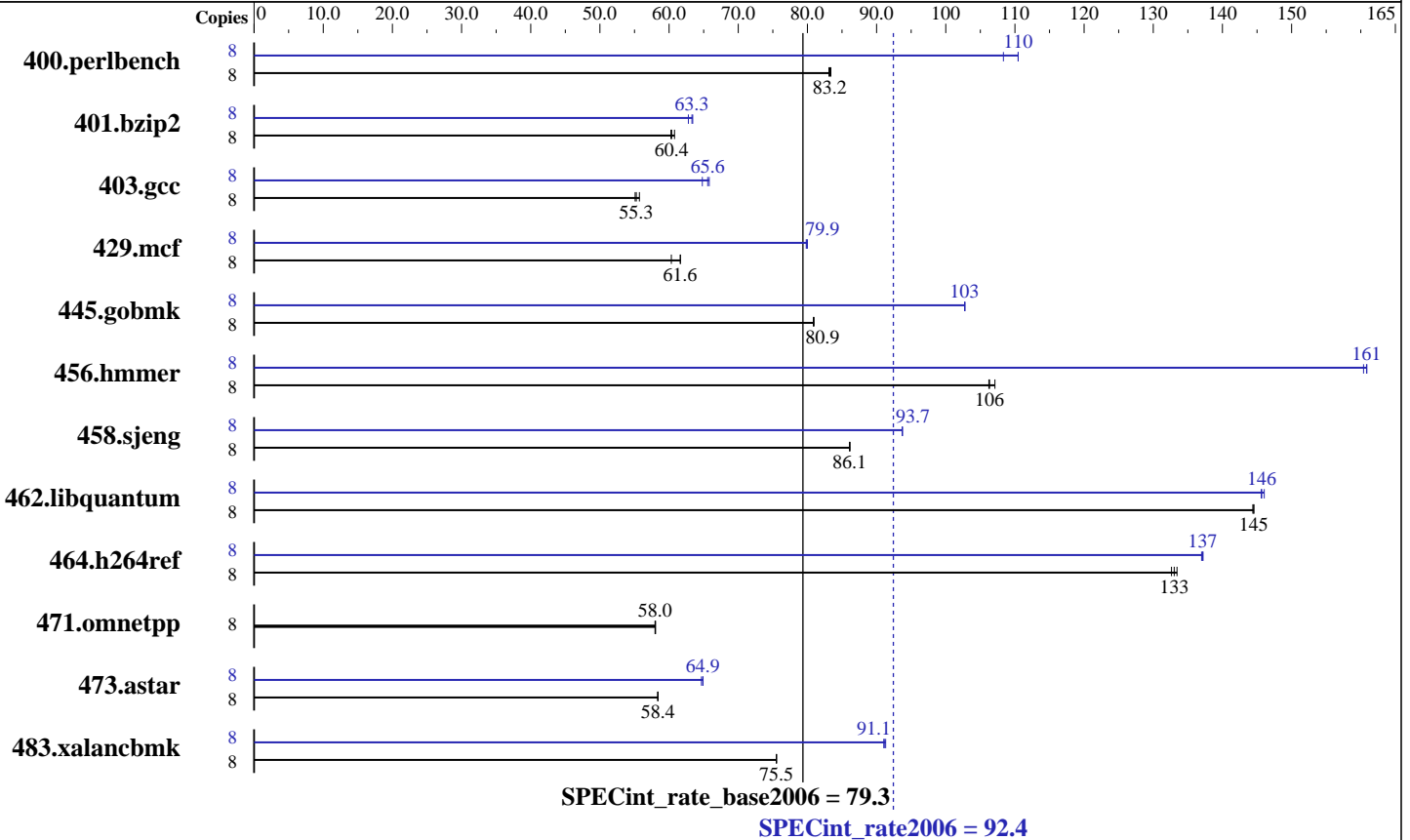
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Jun-2008

Hardware Availability: May-2008

Software Availability: May-2008



Hardware

CPU Name: AMD Opteron 2350
 CPU Characteristics:
 CPU MHz: 2000
 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
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: PGI Workstation Complete Version 7.2-1 PathScale Compiler Suite, Release 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	937	83.4	940	83.1	<u>939</u>	<u>83.2</u>	8	721	108	<u>708</u>	<u>110</u>	708	110
401.bzip2	8	1270	60.8	<u>1279</u>	<u>60.4</u>	1281	60.3	8	1229	62.8	1217	63.4	<u>1220</u>	<u>63.3</u>
403.gcc	8	1156	55.7	1169	55.1	<u>1165</u>	<u>55.3</u>	8	994	64.8	979	65.8	<u>982</u>	<u>65.6</u>
429.mcf	8	1209	60.3	1184	61.6	<u>1184</u>	<u>61.6</u>	8	912	80.0	914	79.8	<u>913</u>	<u>79.9</u>
445.gobmk	8	1038	80.9	1037	80.9	<u>1037</u>	<u>80.9</u>	8	<u>817</u>	<u>103</u>	817	103	817	103
456.hammer	8	<u>702</u>	<u>106</u>	697	107	703	106	8	464	161	465	160	<u>464</u>	<u>161</u>
458.sjeng	8	1124	86.2	1124	86.1	<u>1124</u>	<u>86.1</u>	8	1033	93.7	<u>1033</u>	<u>93.7</u>	1033	93.7
462.libquantum	8	1147	145	<u>1147</u>	<u>145</u>	1148	144	8	1135	146	1138	146	<u>1138</u>	<u>146</u>
464.h264ref	8	1327	133	1335	133	<u>1331</u>	<u>133</u>	8	1290	137	1292	137	<u>1291</u>	<u>137</u>
471.omnetpp	8	<u>862</u>	<u>58.0</u>	863	58.0	861	58.0	8	<u>862</u>	<u>58.0</u>	863	58.0	861	58.0
473.astar	8	962	58.4	<u>962</u>	<u>58.4</u>	962	58.4	8	868	64.7	865	64.9	<u>866</u>	<u>64.9</u>
483.xalancbmk	8	731	75.5	<u>731</u>	<u>75.5</u>	731	75.5	8	<u>606</u>	<u>91.1</u>	605	91.3	606	91.0

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.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

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.html>

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

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

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