



SPEC® CINT2006 Result

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Fujitsu Siemens Computers

SPECint®2006 = 15.4

CELSIUS V840, AMD Opteron 2356 (2.3 GHz)

SPECint_base2006 = 13.4

CPU2006 license: 22

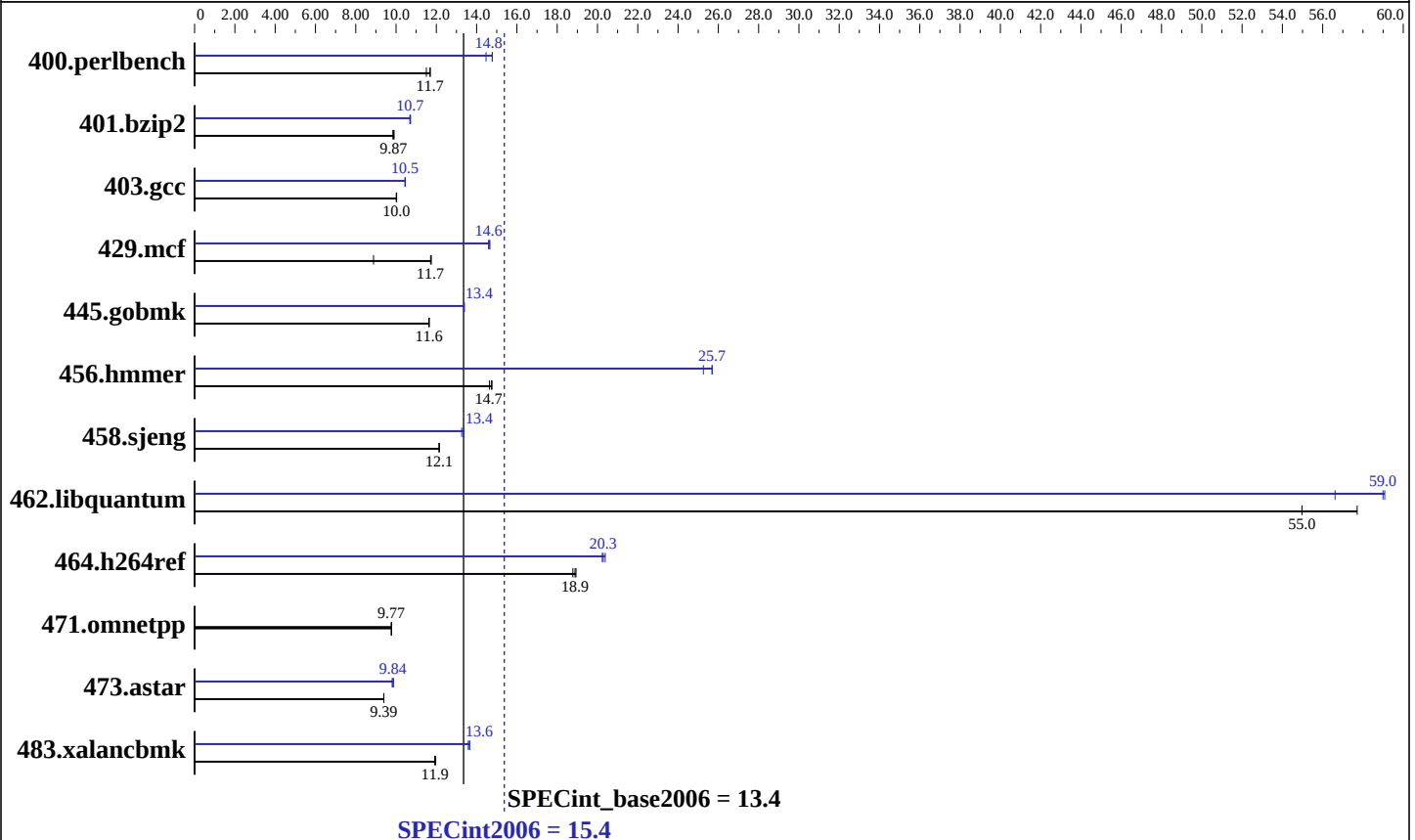
Test sponsor: Fujitsu Siemens Computers

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
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
Auto Parallel: Yes
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	849	11.5	836	11.7	835	11.7	661	14.8	661	14.8	675	14.5
401.bzip2	977	9.87	974	9.90	980	9.85	903	10.7	902	10.7	900	10.7
403.gcc	803	10.0	804	10.0	803	10.0	770	10.5	770	10.5	770	10.5
429.mcf	776	11.8	1027	8.88	778	11.7	625	14.6	624	14.6	622	14.7
445.gobmk	901	11.6	901	11.6	901	11.6	784	13.4	784	13.4	783	13.4
456.hmmer	637	14.6	632	14.8	633	14.7	369	25.3	363	25.7	363	25.7
458.sjeng	996	12.1	996	12.1	997	12.1	913	13.3	906	13.4	905	13.4
462.libquantum	359	57.7	377	55.0	377	55.0	351	59.1	351	59.0	366	56.6
464.h264ref	1172	18.9	1179	18.8	1169	18.9	1094	20.2	1091	20.3	1086	20.4
471.omnetpp	640	9.77	639	9.78	640	9.76	640	9.77	639	9.78	640	9.76
473.astar	747	9.39	747	9.40	747	9.39	716	9.81	713	9.84	711	9.87
483.xalancbmk	578	11.9	579	11.9	576	12.0	508	13.6	506	13.6	505	13.7

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

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
473.astar: -DSPEC_CPU_LITTLE_ENDIAN
483.xalanbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-fastsse -Msmartalloc=huge:896 -Mloop32 -Mconcur=innermost
-Mfpelaxed -Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona-64
-Bstatic_pgi

C++ benchmarks:

-fastsse -Msmartalloc=huge:896 -Mloop32 -Mfpelaxed --zc_eh
-Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona -Bstatic_pgi

Peak Compiler Invocation

Same as Base Compiler Invocation

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
473.astar: -DSPEC_CPU_LITTLE_ENDIAN
483.xalanbmk: -DSPEC_CPU_LINUX



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Peak Optimization Flags

C benchmarks:

400.perlbench: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
-Mipa=inline(pass 2) -fastsse -O4 -Msmartalloc=huge:896
-Mno vect -Mnounroll -Mfp relaxed -tp barcelona-64
-Bstatic_pgi

401.bzip2: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2) -fastsse -O4
-Msmartalloc=huge:896 -Mprefetch=t0 -Mnounroll
-tp barcelona-64 -Bstatic_pgi

403.gcc: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
-Mipa=fast(pass 2) -Mipa=inline(pass 2) -fastsse
-Msmartalloc=huge:896 -Mprefetch=t0 -Mnodalign -Mloop32
-Mfp relaxed -tp barcelona -Bstatic_pgi

429.mcf: -fastsse -Msmartalloc=huge:896 -Mipa=jobs:4 -Mipa=fast
-Mipa=inline:1 -tp barcelona -Bstatic_pgi

445.gobmk: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
-Mipa=fast(pass 2) -fastsse -O4 -Msmartalloc=huge:896
-Mno vect -Mfp relaxed -tp barcelona-64 -Bstatic_pgi

456.hmmer: -fastsse -Mvect=partial -Munroll=n:8 -Msmartalloc=huge:896
-Msafeptr -Mprefetch=t0 -Mfp relaxed -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:896
-Mfp relaxed -tp barcelona-64 -Bstatic_pgi

462.libquantum: -fastsse -Munroll=m:8 -Msmartalloc=huge:896
-Mprefetch=distance:8 -Mconcur=innermost -Mconcur=noaltcode
-Mfp relaxed -Mipa=jobs:4 -Mipa=fast -Mipa=inline
-Mipa=noarg -tp barcelona-64 -Bstatic_pgi

464.h264ref: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2)
-Mipa=jobs:4(pass 2) -Mipa=fast(pass 2)
-Mipa=inline(pass 2) -fastsse -Msmartalloc=huge:896
-Mfp relaxed -tp barcelona-64 -Bstatic_pgi

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:896 -Msafeptr=global -Mloop32
-Mfp relaxed --zc_ah -tp barcelona -Bstatic_pgi

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Peak Optimization Flags (Continued)

```
483.xalancbmk: --zc_eh -fastsse -O4 -Mfprelaxed -Msmartalloc
               -Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona
               -Bstatic_pgi -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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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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