SPEC® CINT2006 Result

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Fujitsu Siemens Computers

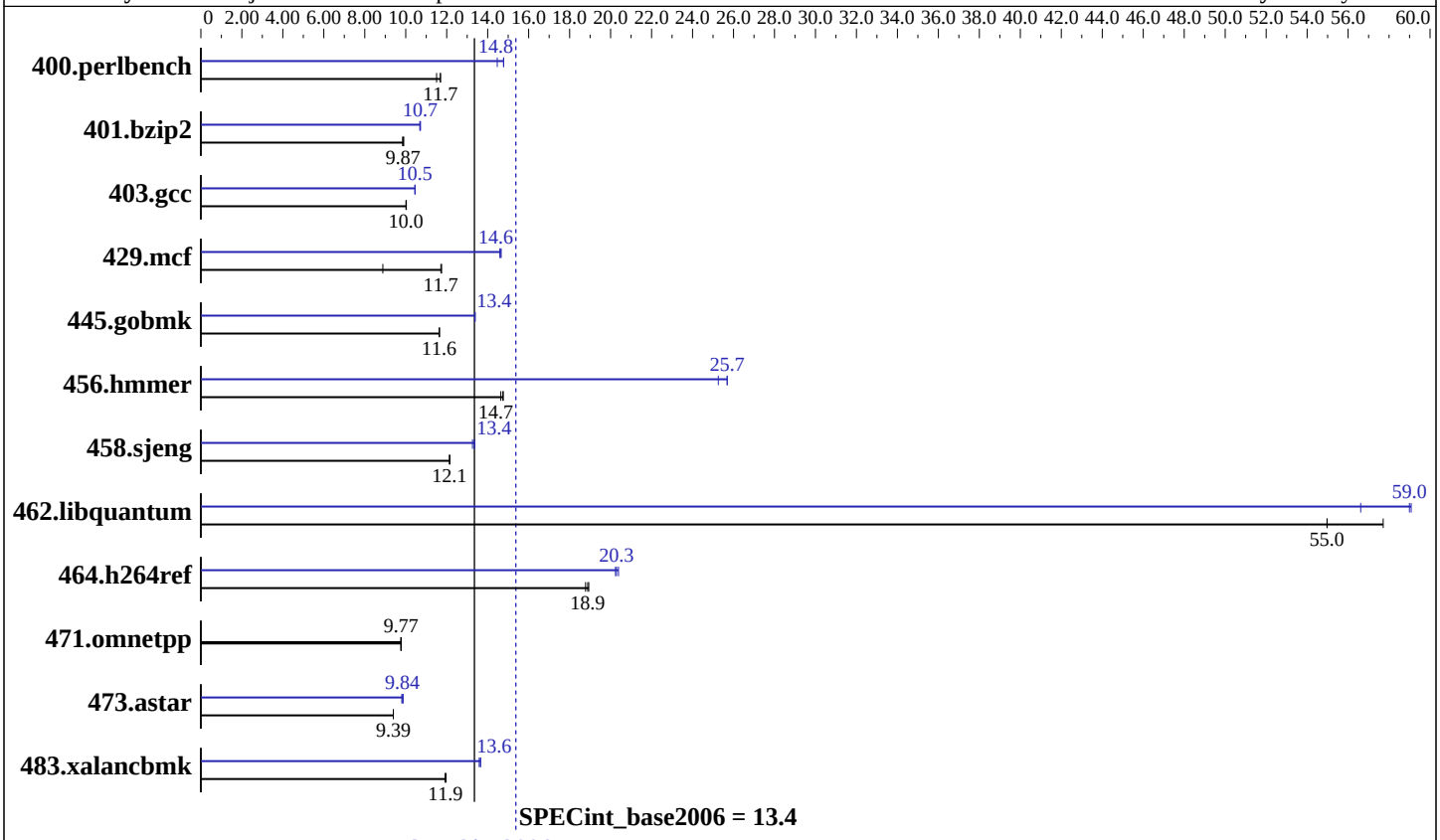
CELSIUS V840, AMD Opteron 2356 (2.3 GHz)

SPECint®2006 = 15.4

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

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:896 -Mloop32 -Mconcur=innermost
-Mfprelaxed -Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona-64
-Bstatic_pgi

C++ benchmarks:
-fastsse -Msmartalloc=huge:896 -Mloop32 -Mfprelaxed --zc_eh
-Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona -Bstatic_pgi

Peak Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

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
483.xalancbmk: -DSPEC_CPU_LINUX

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 -Mnovect -Mnounroll -Mfprelaxed -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 -Mfprelaxed -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 -Mnovect -Mfprelaxed -tp barcelona-64 -Bstatic_pgi`

456.hmmer: `-fastsse -Mvect=partial -Munroll=n:8 -Msmartalloc=huge:896 -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:896 -Mfprelaxed -tp barcelona-64 -Bstatic_pgi`

462.libquantum: `-fastsse -Munroll=m:8 -Msmartalloc=huge:896 -Mprefetch=distance:8 -Mconcur=innermost -Mconcur=noaltcode -Mfprelaxed -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 -Mfprelaxed -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 -Mfprelaxed --zc_eh -tp barcelona -Bstatic_pgi`

Continued on next page

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

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