SPEC® CINT2006 Result

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Fujitsu Siemens Computers

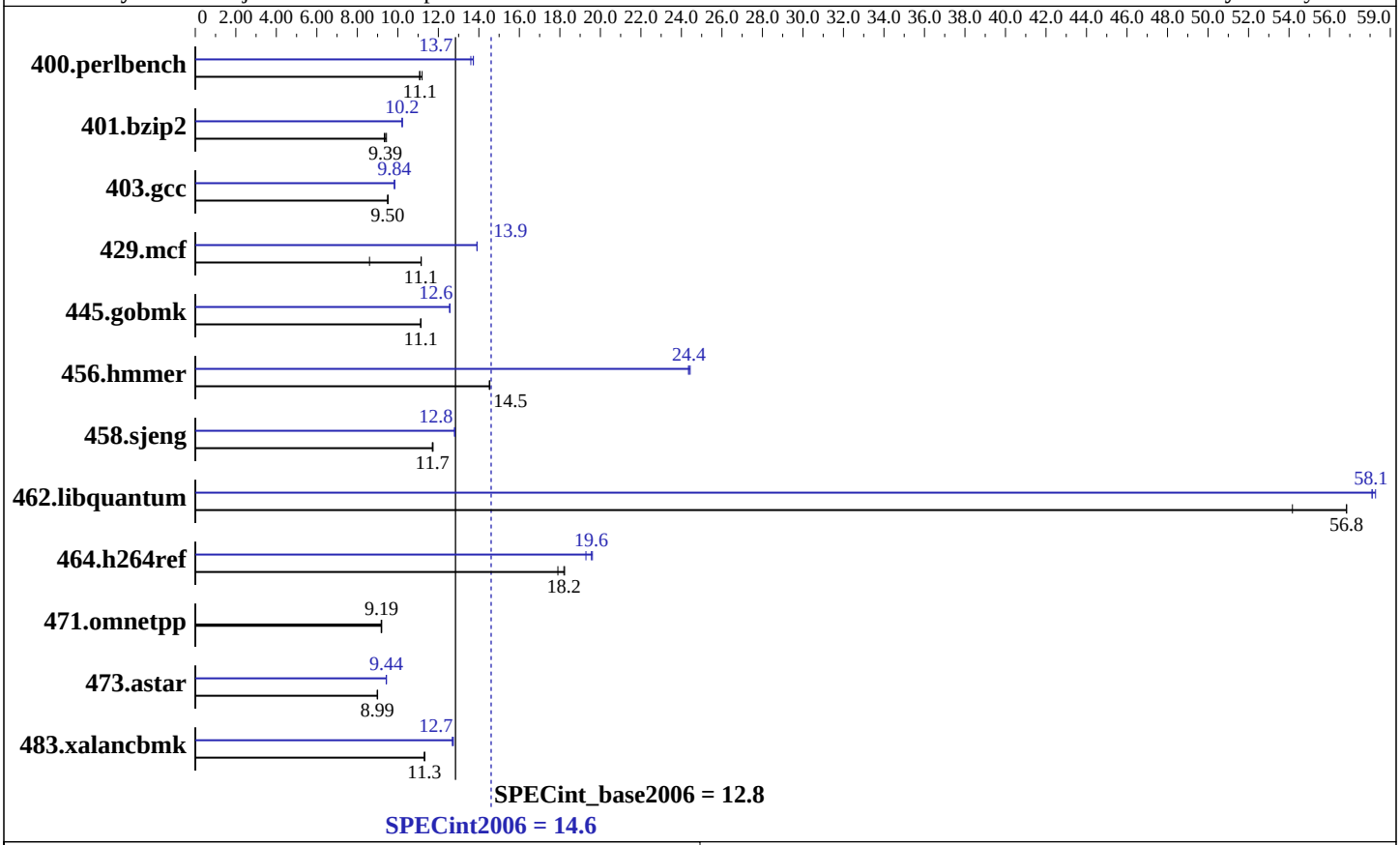
CELSIUS V840, AMD Opteron 2354 (2.2 GHz)

SPECint®2006 = 14.6

SPECint_base2006 = 12.8

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

Test date: May-2008
Hardware Availability: May-2008
Software Availability: May-2008



Hardware

CPU Name:	AMD Opteron 2354
CPU Characteristics:	
CPU MHz:	2200
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 Workstation Complete Version 7.2-1
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	882	11.1	**881**	**11.1**	872	11.2	718	13.6	712	13.7	**712**	**13.7**
401.bzip2	1034	9.33	1022	9.44	**1027**	**9.39**	944	10.2	**945**	**10.2**	945	10.2
403.gcc	**847**	**9.50**	846	9.52	848	9.50	**818**	**9.84**	818	9.84	819	9.83
429.mcf	1060	8.60	817	11.2	**818**	**11.1**	**655**	**13.9**	656	13.9	655	13.9
445.gobmk	**942**	**11.1**	942	11.1	942	11.1	834	12.6	**835**	**12.6**	835	12.6
456.hmmer	643	14.5	**642**	**14.5**	642	14.5	**383**	**24.4**	383	24.3	382	24.4
458.sjeng	1031	11.7	1033	11.7	**1033**	**11.7**	**945**	**12.8**	945	12.8	944	12.8
462.libquantum	**365**	**56.8**	365	56.8	383	54.2	**357**	**58.1**	356	58.3	357	58.1
464.h264ref	**1216**	**18.2**	1236	17.9	1214	18.2	1147	19.3	1129	19.6	**1132**	**19.6**
471.omnetpp	681	9.18	**680**	**9.19**	679	9.20	681	9.18	**680**	**9.19**	679	9.20
473.astar	780	9.00	**781**	**8.99**	782	8.98	745	9.43	744	9.44	**744**	**9.44**
483.xalancbmk	610	11.3	**610**	**11.3**	609	11.3	**543**	**12.7**	542	12.7	544	12.7

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.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.

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