SPEC® CINT2006 Result

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Fujitsu Siemens Computers

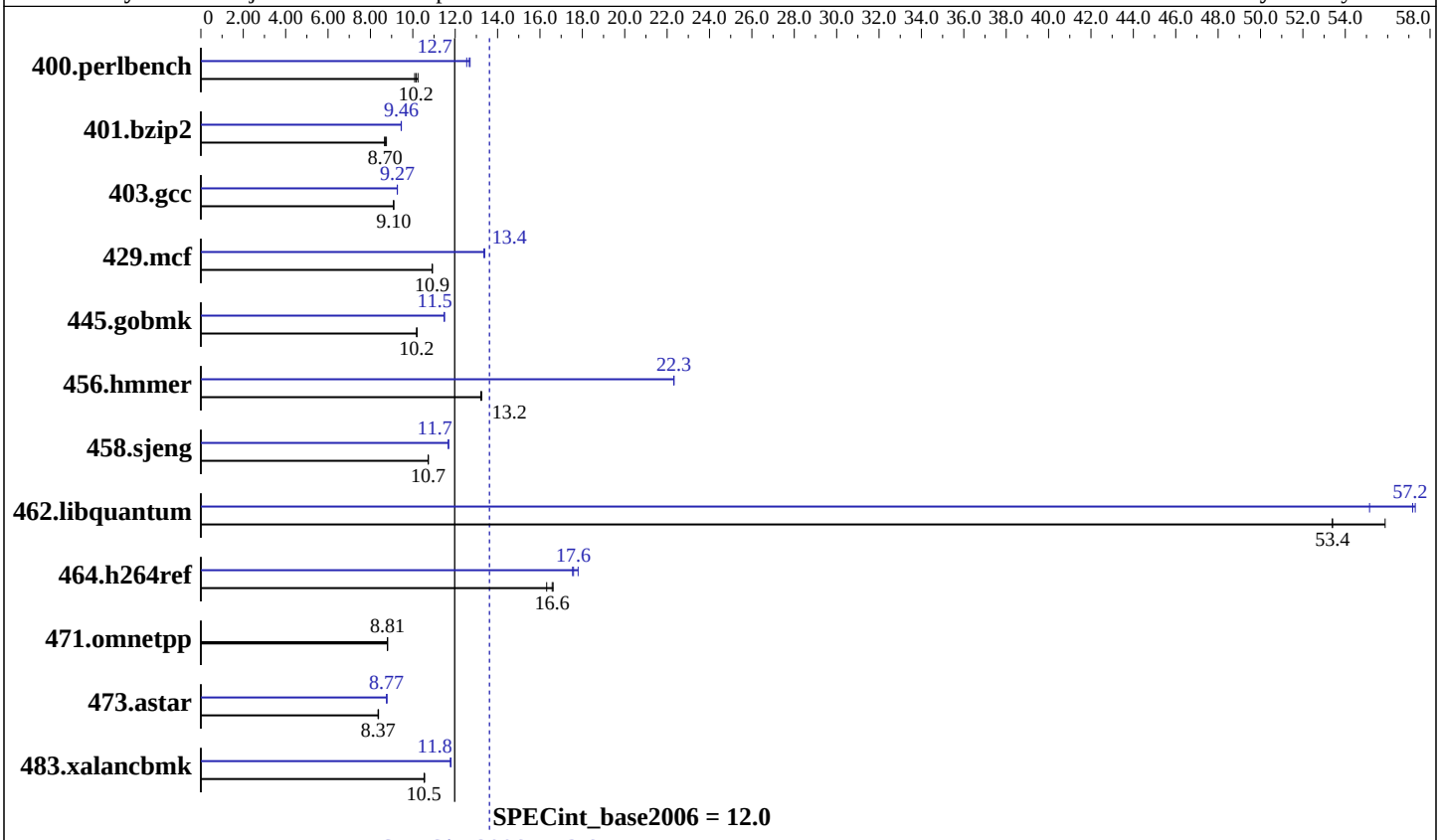
CELSIUS V840, AMD Opteron 2350 (2.0 GHz)

SPECint®2006 = 13.6

SPECint_base2006 = 12.0

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 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, 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	**962**	**10.2**	968	10.1	954	10.2	769	12.7	**771**	**12.7**	779	12.5
401.bzip2	**1109**	**8.70**	1102	8.76	1114	8.67	1020	9.46	1021	9.45	**1020**	**9.46**
403.gcc	885	9.09	**885**	**9.10**	885	9.10	**868**	**9.27**	869	9.27	868	9.27
429.mcf	835	10.9	836	10.9	**835**	**10.9**	681	13.4	683	13.4	**682**	**13.4**
445.gobmk	1029	10.2	**1030**	**10.2**	1030	10.2	913	11.5	**913**	**11.5**	913	11.5
456.hmmer	**705**	**13.2**	707	13.2	704	13.2	418	22.3	418	22.3	**418**	**22.3**
458.sjeng	**1128**	**10.7**	1129	10.7	1127	10.7	1036	11.7	**1036**	**11.7**	1036	11.7
462.libquantum	371	55.9	388	53.4	**388**	**53.4**	362	57.3	**362**	**57.2**	376	55.1
464.h264ref	**1335**	**16.6**	1356	16.3	1331	16.6	1243	17.8	**1259**	**17.6**	1262	17.5
471.omnetpp	710	8.80	709	8.81	**710**	**8.81**	710	8.80	709	8.81	**710**	**8.81**
473.astar	839	8.36	837	8.38	**839**	**8.37**	800	8.78	801	8.77	**801**	**8.77**
483.xalancbmk	653	10.6	655	10.5	**655**	**10.5**	585	11.8	**586**	**11.8**	586	11.8

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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