SPEC® CINT2006 Result

Fujitsu Siemens Computers

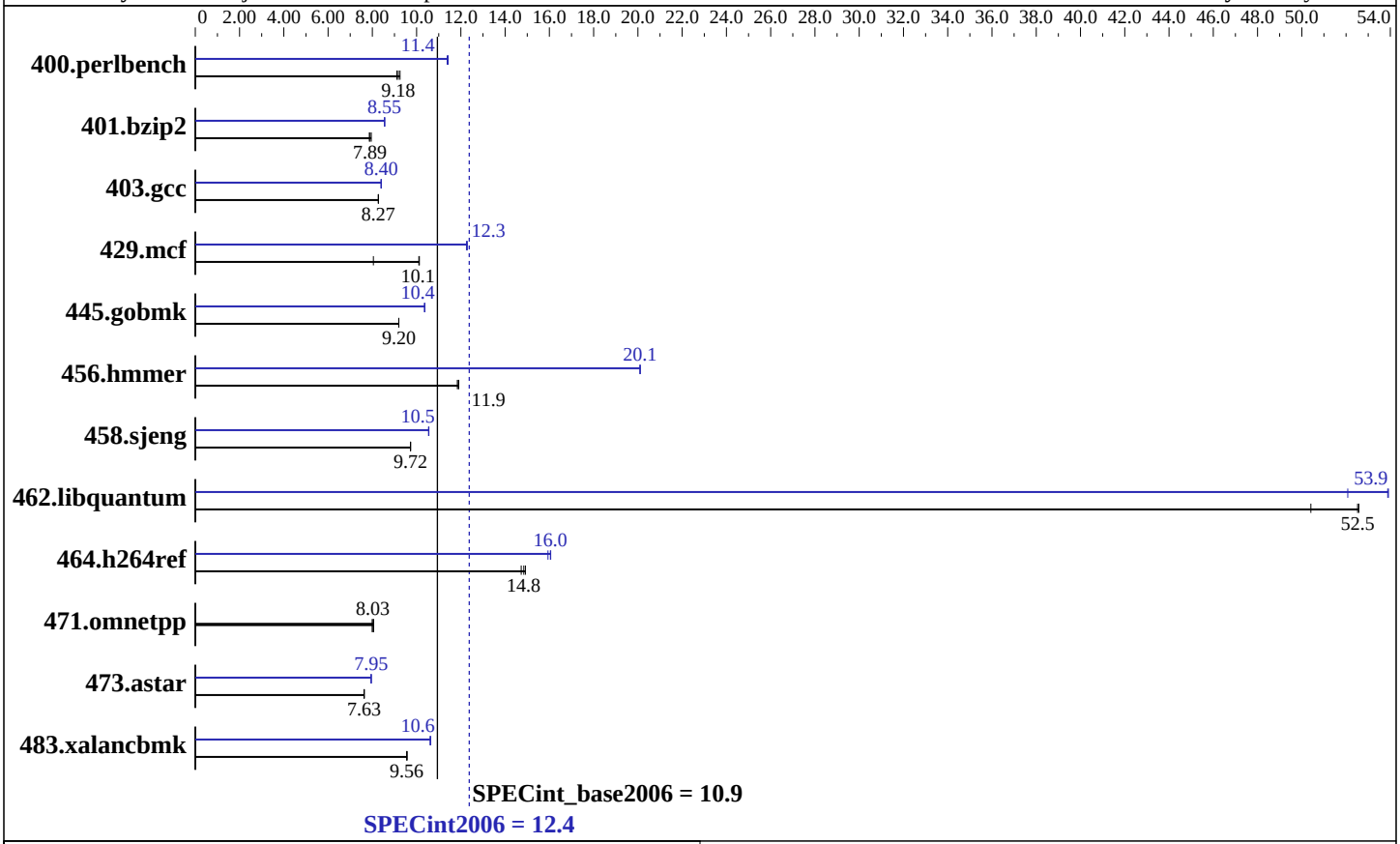
CELSIUS V840, AMD Opteron 2346 HE (1.8 GHz)

SPECint®2006 = 12.4

SPECint_base2006 = 10.9

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 2346 HE
CPU Characteristics:	
CPU MHz:	1800
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	1073	9.11	1056	9.25	**1065**	**9.18**	**856**	**11.4**	858	11.4	855	11.4
401.bzip2	**1222**	**7.89**	1227	7.86	1214	7.95	**1128**	**8.55**	1128	8.56	1129	8.55
403.gcc	**973**	**8.27**	973	8.27	973	8.28	958	8.40	**958**	**8.40**	959	8.40
429.mcf	901	10.1	1133	8.05	**903**	**10.1**	742	12.3	**743**	**12.3**	744	12.3
445.gobmk	1141	9.20	1141	9.19	**1141**	**9.20**	**1012**	**10.4**	1012	10.4	1012	10.4
456.hmmer	784	11.9	**785**	**11.9**	788	11.8	464	20.1	464	20.1	**464**	**20.1**
458.sjeng	1245	9.72	**1244**	**9.72**	1243	9.73	**1147**	**10.5**	1146	10.6	1148	10.5
462.libquantum	**395**	**52.5**	411	50.4	394	52.6	398	52.1	384	53.9	**385**	**53.9**
464.h264ref	1484	14.9	**1491**	**14.8**	1503	14.7	1378	16.1	1389	15.9	**1379**	**16.0**
471.omnetpp	782	7.99	775	8.06	**778**	**8.03**	782	7.99	775	8.06	**778**	**8.03**
473.astar	**920**	**7.63**	919	7.64	921	7.62	**883**	**7.95**	883	7.95	884	7.94
483.xalancbmk	**722**	**9.56**	722	9.56	721	9.57	650	10.6	**650**	**10.6**	649	10.6

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`

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

Tested with SPEC CPU2006 v1.0.
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