SPEC® CINT2006 Result

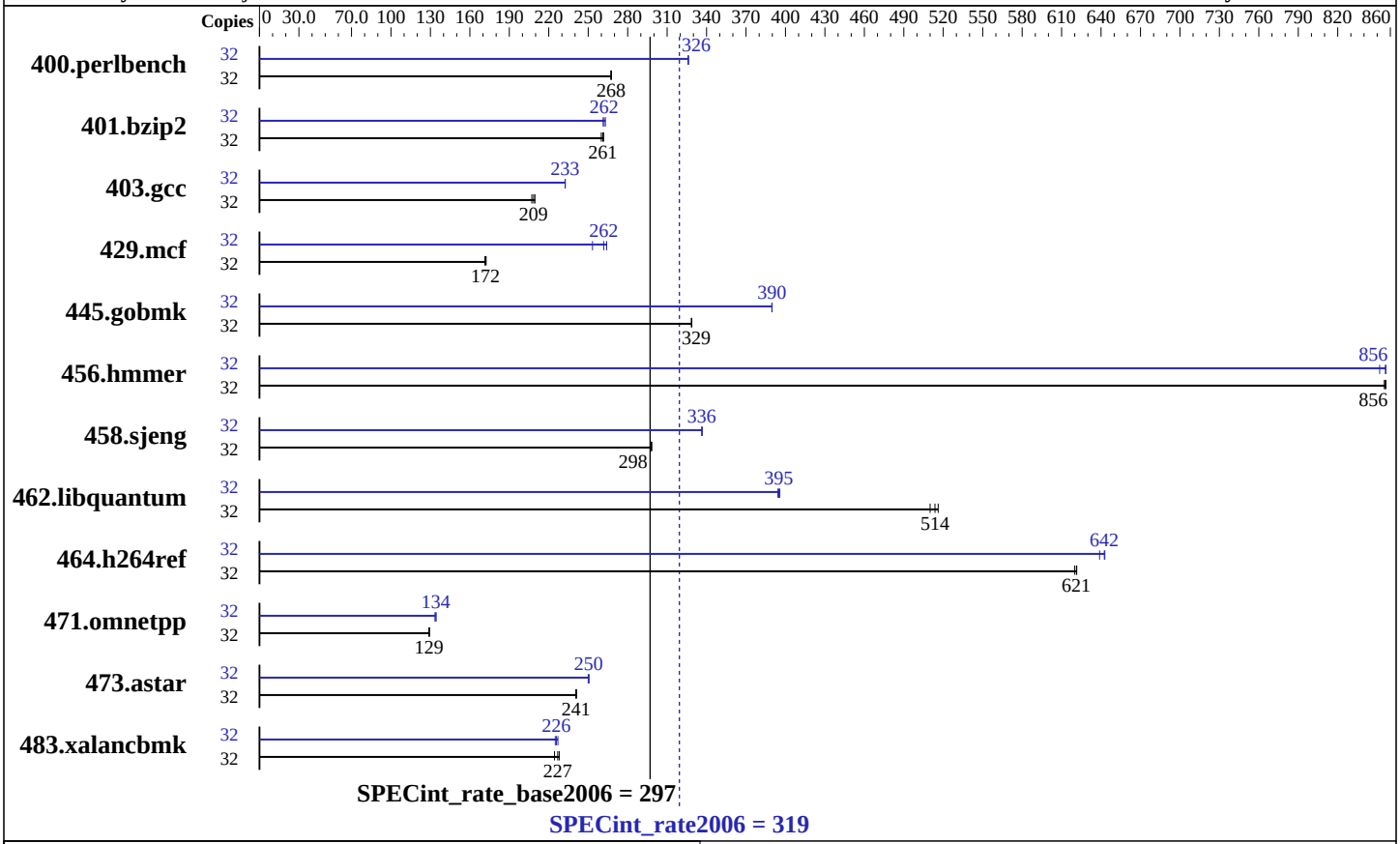
Fujitsu Limited
PRIMEQUEST 540A

SPECint®_rate2006 = 319

SPECint_rate_base2006 = 297

CPU2006 license: 19
Test sponsor: Fujitsu Limited
Tested by: Fujitsu Limited

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



Hardware

CPU Name:	Dual-Core Intel Itanium 9130M
CPU Characteristics:	1.66GHz/8MB, 667MHz FSB
CPU MHz:	1667
FPU:	Integrated
CPU(s) enabled:	32 cores, 16 chips, 2 cores/chip
CPU(s) orderable:	2-16 chips
Primary Cache:	16 KB I + 16 KB D on chip per core
Secondary Cache:	1 MB I + 256 KB D on chip per core
L3 Cache:	4 MB I+D on chip per core
Other Cache:	None
Memory:	256 GB (128 x 2GB DDR2-667 DIMMs)
Disk Subsystem:	2 x 147GB (SCSI Ultra 320, 10000rpm) No RAID configuration
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux 5.1, Kernel 2.6.18-53.el5 on an ia64
Compiler:	Intel C++ Compiler for Linux 10.1 (Build 20080112)
Auto Parallel:	No
File System:	ext2
System State:	Runlevel 1 (single user mode)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill Smartheap 8.0

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	**1169**	**268**	1168	268	1170	267	32	958	326	**959**	**326**	959	326
401.bzip2	32	1180	262	1188	260	**1183**	**261**	32	1174	263	1182	261	**1178**	**262**
403.gcc	32	**1235**	**209**	1230	209	1244	207	32	1108	232	**1108**	**233**	1108	233
429.mcf	32	1703	171	1693	172	**1697**	**172**	32	1152	253	**1115**	**262**	1105	264
445.gobmk	32	1021	329	1022	328	**1021**	**329**	32	861	390	**861**	**390**	861	390
456.hmmer	32	349	856	**349**	**856**	349	857	32	349	857	350	852	**349**	**856**
458.sjeng	32	1298	298	**1299**	**298**	1300	298	32	**1151**	**336**	1151	336	1150	337
462.libquantum	32	**1291**	**514**	1285	516	1300	510	32	**1679**	**395**	1675	396	1682	394
464.h264ref	32	1142	620	**1140**	**621**	1139	622	32	**1102**	**642**	1102	643	1108	639
471.omnetpp	32	1551	129	1548	129	**1550**	**129**	32	1499	133	**1491**	**134**	1490	134
473.astar	32	932	241	**933**	**241**	934	241	32	**897**	**250**	896	251	899	250
483.xalancbmk	32	**973**	**227**	984	224	969	228	32	**978**	**226**	982	225	973	227

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
Processes are bound to CPUs using taskset.

limit stacksize unlimited

Memory system is in "Non Mirror Mode".

The following 2 environment variables were set
    MALLOC_MMAP_MAX_=0
    MALLOC_TRIM_THRESHOLD_=-1
This will cause use of sbrk() calls instead of
mmap() calls to get memory from the system.
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_IA64
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
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-fast -IPF-fp-relaxed -ansi-alias -no-opt-prefetch-initial-values
-opt-prefetch-next-iteration -opt-prefetch-issue-excl-hint
-unroll-aggressive

C++ benchmarks:
-fast -IPF-fp-relaxed -ansi-alias -no-opt-prefetch-initial-values
-opt-prefetch-next-iteration -opt-prefetch-issue-excl-hint
-unroll-aggressive -Wl,-z,muldefs
/opt/SmartHeap_8/lib/libsmartheapC64.a
/opt/SmartHeap_8/lib/libsmartheap64.a

Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi_alias
-IPF_fp_relaxed -opt-mod-versioning -unroll-aggressive
-inline-factor=150

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -IPF-fp-relaxed
-ansi-alias -fno-alias -auto-ilp32
-opt-prefetch-next-iteration

403.gcc: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi_alias
-auto-ilp32 -IPF_fp_relaxed -no-opt-prefetch-initial-values
-opt-prefetch-next-iteration -unroll-aggressive

429.mcf: -fast -IPF-fp-relaxed -auto-ilp32 -ansi-alias
-opt-prefetch-next-iteration

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -fast -IPF_fp_relaxed
-auto-ilp32 -no-opt-prefetch-initial-values
-opt-prefetch-next-iteration -ansi-alias

456.hmmer: -fast -IPF_fp_relaxed -auto-ilp32
-no-opt-prefetch-initial-values

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -IPF_fp_relaxed
-unroll-aggressive -no-prefetch
-opt-prefetch-next-iteration

462.libquantum: -fast -IPF-fp-relaxed -auto-ilp32 -ansi-alias
-opt-mod-versioning -no-opt-prefetch-initial-values
-opt-prefetch-issue-excl-hint

464.h264ref: -fast -IPF-fp-relaxed -ansi-alias -fno-alias -auto-ilp32
-no-prefetch -inline-factor=150 -opt-mod-versioning
-unroll-aggressive -opt-prefetch-next-iteration

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -fast -IPF-fp-relaxed
-ansi-alias -fno-alias -inline-max-per-routine=50
-inline-factor=150 -Wl,-z,muldefs
/opt/SmartHeap_8/lib/libsmartheapC64.a
/opt/SmartHeap_8/lib/libsmartheap64.a

473.astar: -fast -IPF-fp-relaxed -no-prefetch -ansi-alias -fno-alias
-inline-max-size=5000 -Wl,-z,muldefs
/opt/SmartHeap_8/lib/libsmartheapC64.a
/opt/SmartHeap_8/lib/libsmartheap64.a

Continued on next page

Peak Optimization Flags (Continued)

483.xalancbmk: `-fast -IPF-fp-relaxed -unroll-aggressive -ansi-alias -no-opt-prefetch-initial-values -Wl,-z,muldefs /opt/SmartHeap_8/lib/libsmartheapC64.a /opt/SmartHeap_8/lib/libsmartheap64.a`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Fujitsu.PQ580A.ipf.linux.flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Fujitsu.PQ580A.ipf.linux.flags.xml`

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

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