SPEC® CINT2006 Result

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Hewlett-Packard Company

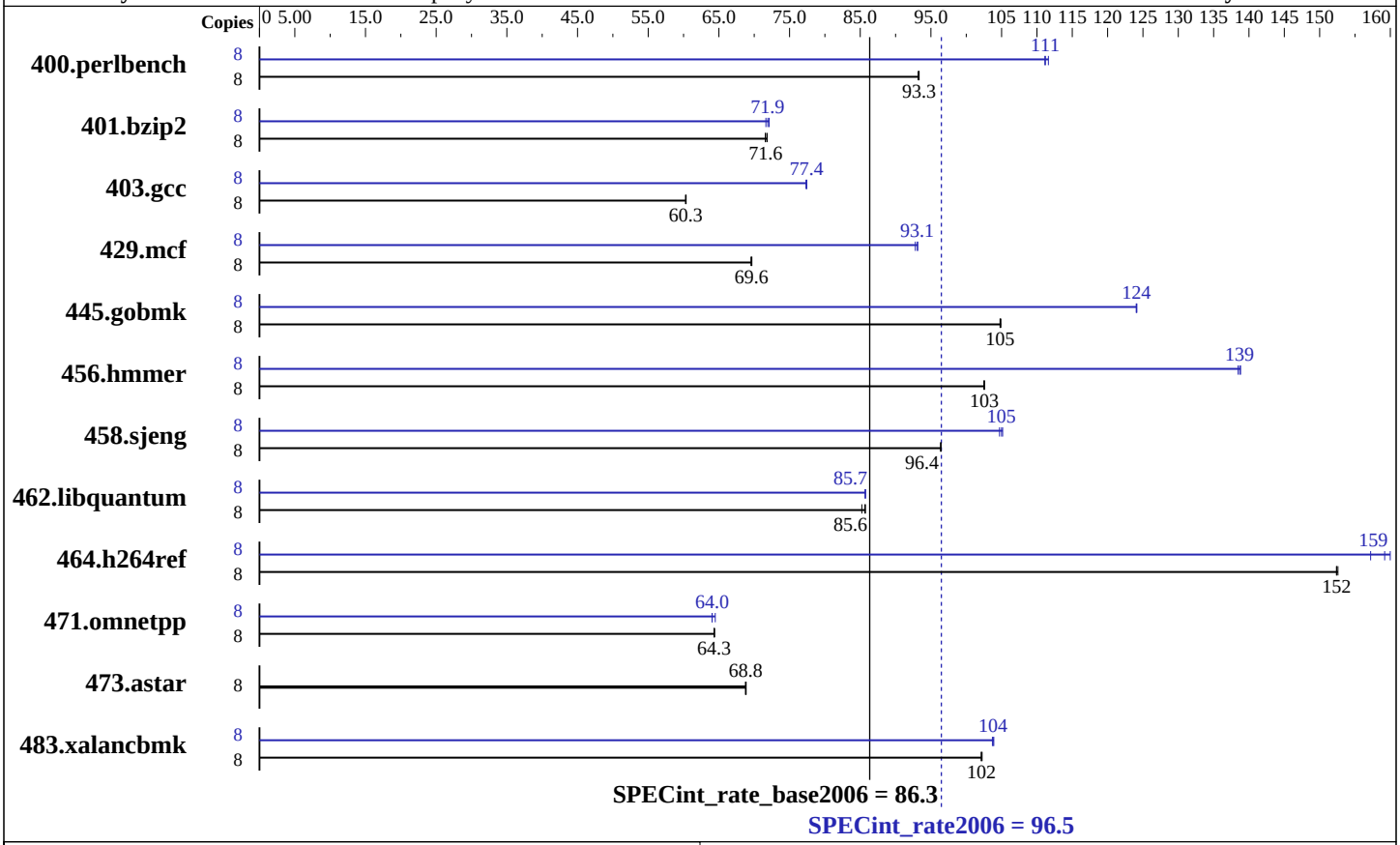
Proliant DL585 G2 (AMD Opteron 8218)

SPECint®_rate2006 = 96.5

SPECint_rate_base2006 = 86.3

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Mar-2007
Hardware Availability: Nov-2006
Software Availability: Mar-2007



Hardware

CPU Name:	AMD Opteron 8218
CPU Characteristics:	
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	32 GB (16x2 GB, PC2-5300P CL5)
Disk Subsystem:	72 GB 10 K SAS
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SuSE kernel 2.6.16.21-0.8-smp
Compiler:	QLogic PathScale Compiler Suite, Release 3.0
Auto Parallel:	No
File System:	ext2
System State:	Multi-user run level 3
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1

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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	8	839	93.2	838	93.3	**838**	**93.3**	8	703	111	700	112	**703**	**111**
401.bzip2	8	1075	71.8	1079	71.6	**1078**	**71.6**	8	1077	71.6	**1073**	**71.9**	1071	72.1
403.gcc	8	1068	60.3	1067	60.4	**1068**	**60.3**	8	833	77.3	**832**	**77.4**	832	77.4
429.mcf	8	1047	69.7	1049	69.5	**1048**	**69.6**	8	783	93.1	786	92.8	**784**	**93.1**
445.gobmk	8	800	105	**801**	**105**	801	105	8	676	124	**676**	**124**	676	124
456.hmmer	8	728	102	728	103	**728**	**103**	8	**538**	**139**	539	138	538	139
458.sjeng	8	**1004**	**96.4**	1004	96.4	1004	96.4	8	921	105	925	105	**922**	**105**
462.libquantum	8	1945	85.2	1933	85.7	**1936**	**85.6**	8	1933	85.7	**1934**	**85.7**	1934	85.7
464.h264ref	8	1162	152	1160	153	**1162**	**152**	8	**1112**	**159**	1107	160	1126	157
471.omnetpp	8	776	64.4	777	64.3	**777**	**64.3**	8	775	64.5	**781**	**64.0**	781	64.0
473.astar	8	**816**	**68.8**	817	68.8	816	68.9	8	**816**	**68.8**	817	68.8	816	68.9
483.xalancbmk	8	540	102	541	102	**540**	**102**	8	**532**	**104**	531	104	532	104

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

Platform Notes

```
Node Interleaving Disabled in BIOS
taskset utility used to bind CPU(s) to processes
```

Base Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

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:
```
-Ofast -OPT:malloc_alg=1
```

C++ benchmarks:
```
-Ofast -m32 -L/cpu2006/amd514K8.lib/32 -lsmartheap
```

Peak Compiler Invocation

C benchmarks:
```
pathcc
```

C++ benchmarks:
```
pathCC
```

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: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast -LNO:opt=0`

401.bzip2: `-O3 -LNO:ou_prod_max=10 -OPT:Ofast -OPT:alias=disjoint`

403.gcc: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-m32 -O3 -OPT:Ofast`

429.mcf: `-m32 -O3 -ipa -L/cpu2006/amd514K8.lib/32 -lsmartheap`

445.gobmk: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off -WOPT:retype_expr=on`

Continued on next page

Peak Optimization Flags (Continued)

456.hmmer: `-O2 -OPT:alias=disjoint -OPT:malloc_alg=1 -CG:cflow=0`

458.sjeng: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -IPA:plimit=50000 -IPA:pu_reorder=2`

462.libquantum: `-O3 -ipa -CG:local_fwd_sched=on -IPA:space=1000`

464.h264ref: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0`

C++ benchmarks:

471.omnetpp: `-Ofast -CG:gcm=off -m32 -L/cpu2006/amd514K8.lib/32 -lsmartheap`

473.astar: `basepeak = yes`

483.xalancbmk: `-Ofast -m32 -OPT:unroll_times_max=8 -L/cpu2006/amd514K8.lib/32 -lsmartheap`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.16.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.16.xml`

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