SPEC® CINT2006 Result

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Hewlett-Packard Company

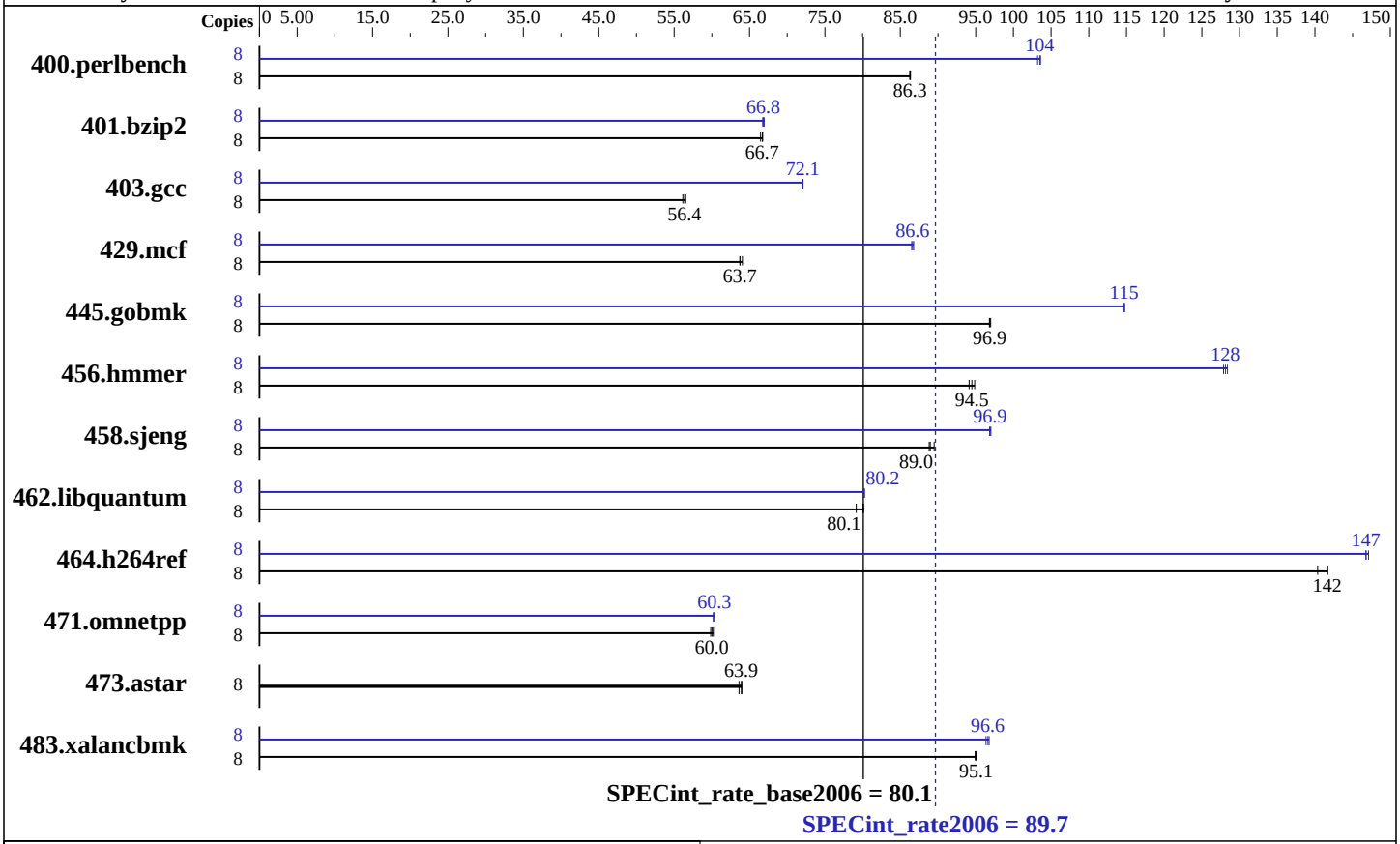
Proliant DL585 G2 (AMD Opteron 8216)

SPECint®_rate2006 = 89.7

SPECint_rate_base2006 = 80.1

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 8216
CPU Characteristics:	
CPU MHz:	2400
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	906	86.3	**906**	**86.3**	905	86.4	8	**755**	**104**	754	104	757	103
401.bzip2	8	1157	66.8	**1157**	**66.7**	1161	66.5	8	**1155**	**66.8**	1153	66.9	1157	66.7
403.gcc	8	1139	56.5	1147	56.2	**1142**	**56.4**	8	893	72.1	**894**	**72.1**	894	72.1
429.mcf	8	1139	64.1	1145	63.7	**1145**	**63.7**	8	843	86.5	841	86.8	**842**	**86.6**
445.gobmk	8	865	97.0	867	96.8	**866**	**96.9**	8	732	115	731	115	**732**	**115**
456.hmmer	8	787	94.9	793	94.1	**790**	**94.5**	8	584	128	**583**	**128**	581	128
458.sjeng	8	**1088**	**89.0**	1090	88.8	1082	89.5	8	998	97.0	1000	96.8	**999**	**96.9**
462.libquantum	8	2094	79.2	**2070**	**80.1**	2069	80.1	8	2066	80.2	2067	80.2	**2066**	**80.2**
464.h264ref	8	**1250**	**142**	1250	142	1261	140	8	1203	147	1206	147	**1206**	**147**
471.omnetpp	8	835	59.9	831	60.2	**833**	**60.0**	8	**829**	**60.3**	831	60.2	829	60.3
473.astar	8	**879**	**63.9**	883	63.6	878	64.0	8	**879**	**63.9**	883	63.6	878	64.0
483.xalancbmk	8	**581**	**95.1**	581	94.9	581	95.1	8	570	96.8	573	96.4	**571**	**96.6**

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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