SPEC® CINT2006 Result

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Hewlett-Packard Company

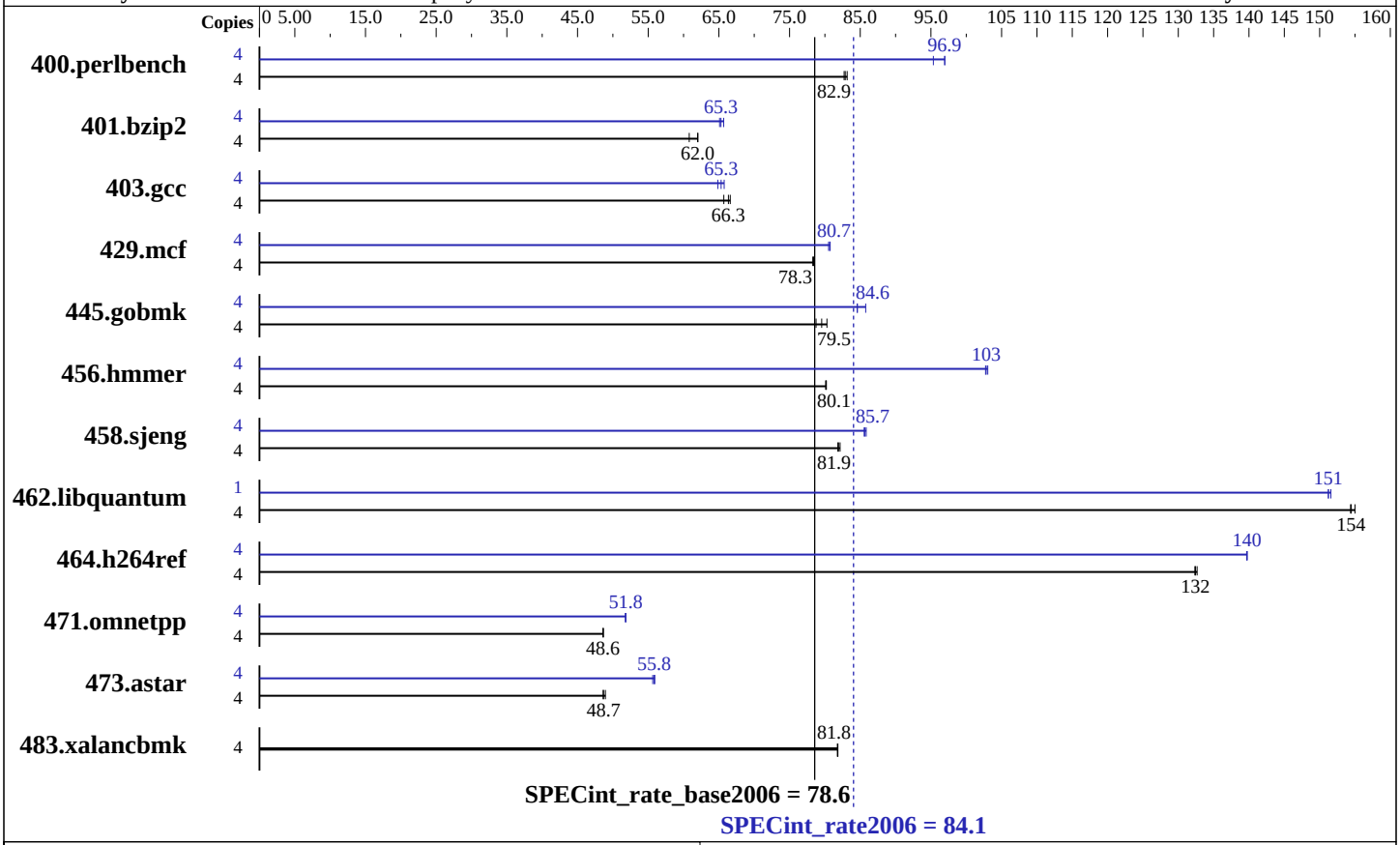
ProLiant ML310 G5
(3.0 GHz, Intel Xeon X3370)

SPECint®_rate2006 = 84.1

SPECint_rate_base2006 = 78.6

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

Test date: Sep-2008
Hardware Availability: Sep-2008
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon X3370
CPU Characteristics:	3.0 GHz, 2 x 6 MB L2 shared, 1333 MHz system bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	8 GB(4x2 GB PC2-6400E CL6)
Disk Subsystem:	250 GB 7.2 K SATA
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap 8.1 Binutils 2.18.50.0.7.20080502

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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	4	472	82.7	**472**	**82.9**	470	83.1	4	410	95.3	403	97.0	**403**	**96.9**
401.bzip2	4	635	60.8	622	62.0	**623**	**62.0**	4	**591**	**65.3**	588	65.7	593	65.1
403.gcc	4	**485**	**66.3**	490	65.7	483	66.6	4	497	64.9	**493**	**65.3**	490	65.7
429.mcf	4	466	78.3	**466**	**78.3**	465	78.4	4	453	80.5	**452**	**80.7**	452	80.7
445.gobmk	4	**528**	**79.5**	533	78.7	523	80.3	4	489	85.8	496	84.6	**496**	**84.6**
456.hmmer	4	**466**	**80.1**	466	80.1	465	80.2	4	**363**	**103**	363	103	362	103
458.sjeng	4	589	82.1	591	81.8	**591**	**81.9**	4	566	85.6	564	85.8	**565**	**85.7**
462.libquantum	4	535	155	**537**	**154**	537	154	1	137	151	137	152	**137**	**151**
464.h264ref	4	669	132	667	133	**668**	**132**	4	633	140	634	140	**634**	**140**
471.omnetpp	4	514	48.6	**514**	**48.6**	514	48.6	4	483	51.8	**482**	**51.8**	482	51.8
473.astar	4	574	48.9	578	48.6	**577**	**48.7**	4	505	55.6	502	55.9	**503**	**55.8**
483.xalancbmk	4	338	81.8	337	81.8	**337**	**81.8**	4	338	81.8	337	81.8	**337**	**81.8**

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

Submit Notes

```
The config file option 'submit' was used.
 taskset was used to bind processes to cores except
 for 462.libquantum peak
```

Operating System Notes

```
 'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to physical,0
 KMP_STACKSIZE set to 64M
```

Platform Notes

```
BIOS configuration:
  Adjacent Sector Prefetch Disabled
  Hardware Prefetcher Disabled
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/lib -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

Continued on next page

Peak Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -parallel -par-runtime-control -opt-prefetch

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.html`
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.xml`
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.xml`

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