SPEC® CINT2006 Result

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Hewlett-Packard Company

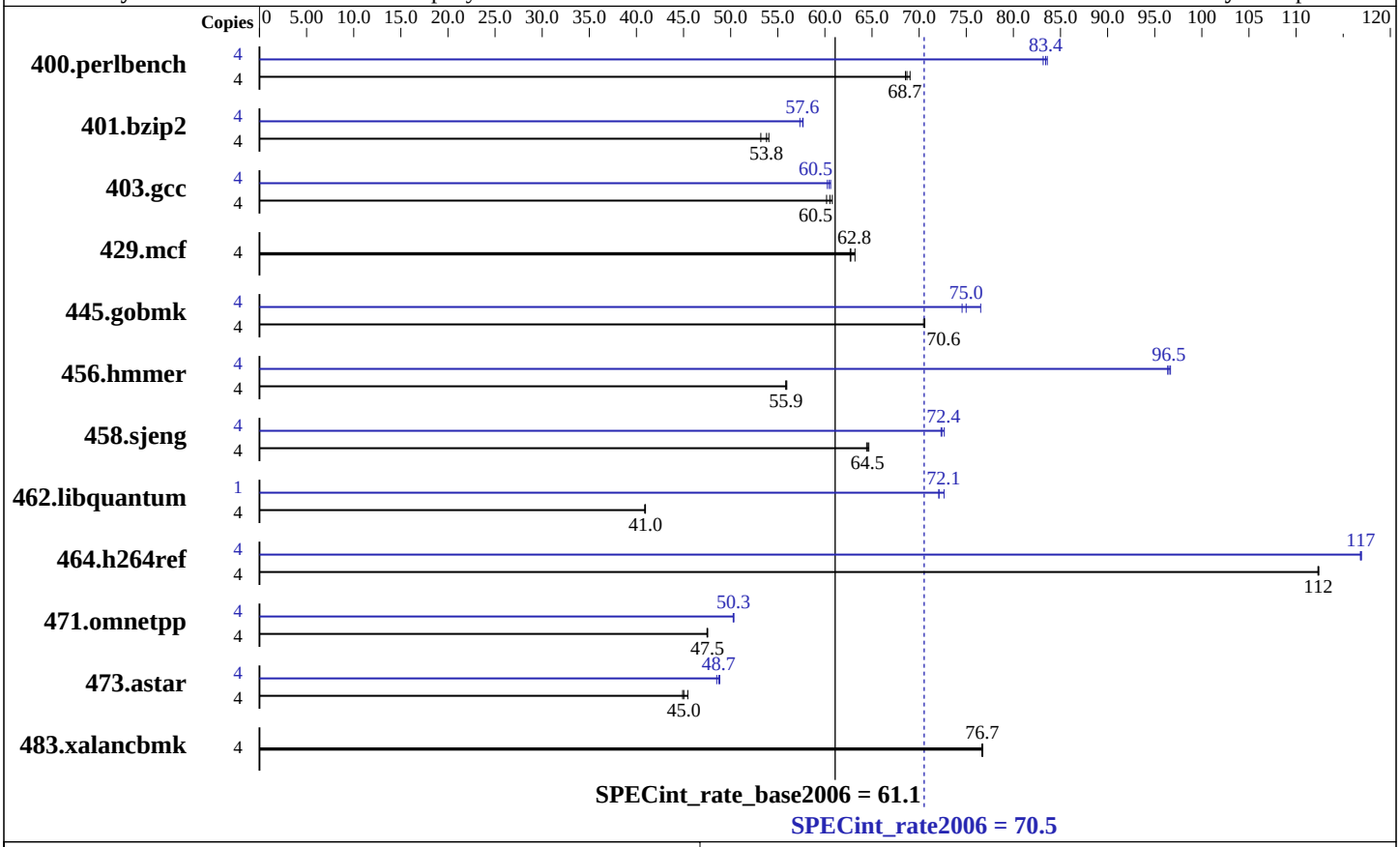
ProLiant ML310 G5
(2.66 GHz, Intel Xeon processor X3350)

SPECint®_rate2006 = 70.5

SPECint_rate_base2006 = 61.1

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

Test date: Apr-2008
Hardware Availability: Mar-2008
Software Availability: Sep-2007



Hardware

CPU Name:	Intel Xeon X3350
CPU Characteristics:	2.66 GHz, 2x6 MB L2 shared, 1333 MHz system bus
CPU MHz:	2666
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 CL5)
Disk Subsystem:	1x250 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 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 binutils-2.17.50

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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	570	68.5	566	69.0	**569**	**68.7**	4	470	83.2	**468**	**83.4**	467	83.6
401.bzip2	4	726	53.2	**717**	**53.8**	714	54.1	4	673	57.3	**670**	**57.6**	669	57.7
403.gcc	4	**532**	**60.5**	535	60.2	530	60.8	4	531	60.6	**533**	**60.5**	534	60.3
429.mcf	4	577	63.2	**581**	**62.8**	582	62.7	4	577	63.2	**581**	**62.8**	582	62.7
445.gobmk	4	594	70.6	595	70.5	**594**	**70.6**	4	548	76.5	563	74.6	**560**	**75.0**
456.hmmer	4	667	56.0	668	55.8	**668**	**55.9**	4	386	96.7	387	96.4	**387**	**96.5**
458.sjeng	4	748	64.7	**750**	**64.5**	751	64.4	4	**668**	**72.4**	666	72.7	669	72.3
462.libquantum	4	2028	40.9	2024	41.0	**2024**	**41.0**	1	287	72.1	285	72.6	**287**	**72.1**
464.h264ref	4	788	112	**788**	**112**	787	112	4	**757**	**117**	758	117	757	117
471.omnetpp	4	**526**	**47.5**	526	47.6	526	47.5	4	**497**	**50.3**	497	50.3	497	50.3
473.astar	4	**624**	**45.0**	618	45.5	625	44.9	4	**576**	**48.7**	575	48.8	579	48.5
483.xalancbmk	4	**360**	**76.7**	360	76.8	360	76.7	4	**360**	**76.7**	360	76.8	360	76.7

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

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`

Continued on next page

Base Portability Flags (Continued)

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

Base Optimization Flags

C benchmarks:
-fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/cpu2006/SmartHeap_8.1/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/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
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) `-fast -ansi-alias -prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch`

403.gcc: `-fast -inline-calloc -opt-malloc-options=3`

429.mcf: `basepeak = yes`

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

456.hmmer: `-fast -unroll2 -ansi-alias -opt-multi-version-aggressive`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4`

462.libquantum: `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control`

464.h264ref: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

473.astar: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

483.xalancbmk: `basepeak = yes`

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-int-flags.20090714.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-int-flags.20090714.xml`

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