



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 70.5

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

SPECint_rate_base2006 = 61.1

CPU2006 license: 3

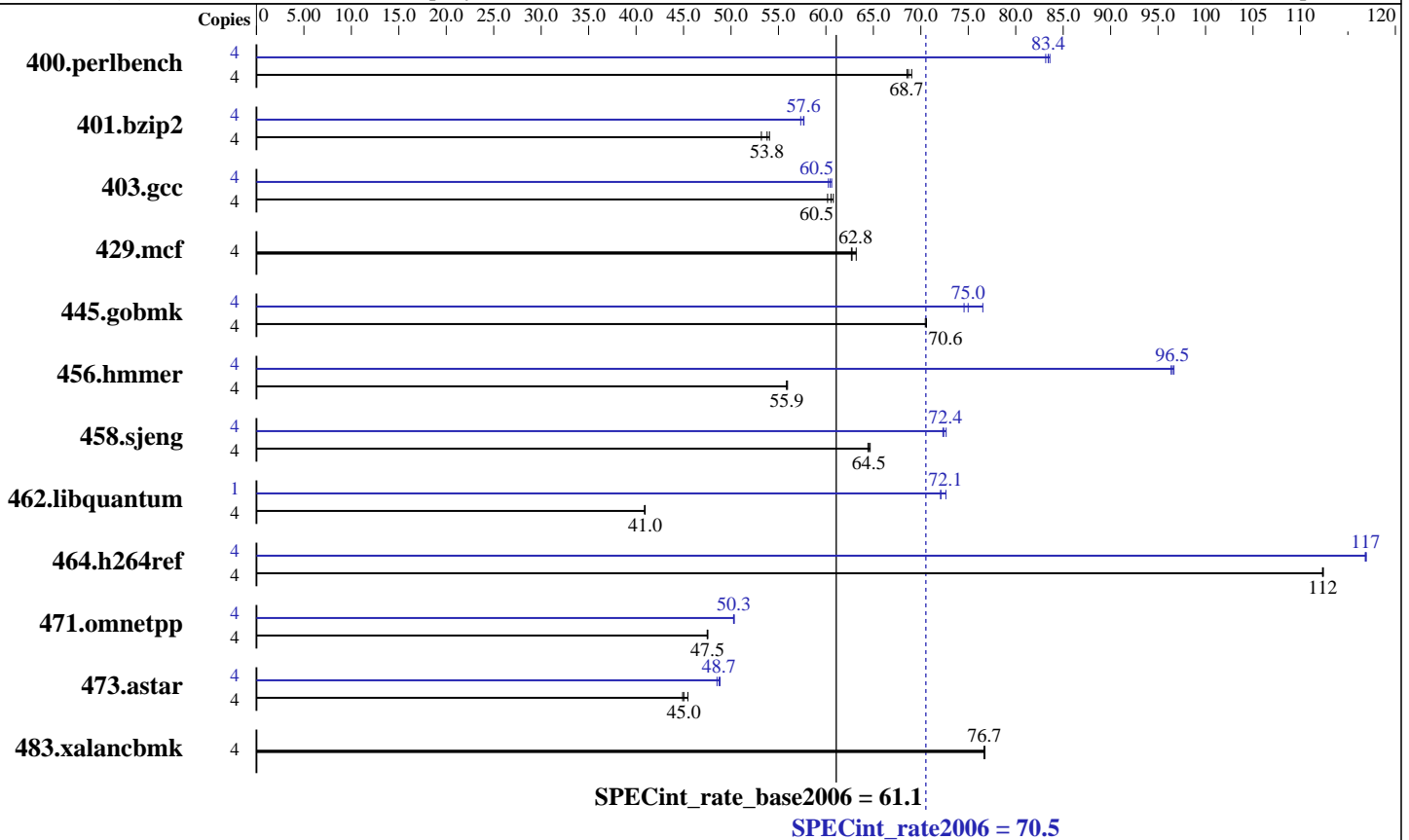
Test date: Apr-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2008

Tested by: Hewlett-Packard Company

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



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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



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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>



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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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