



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 71.7

ProLiant ML350 G5
(3.16 GHz, Intel Xeon X5460)

SPECint_rate_base2006 = 60.2

CPU2006 license: 3

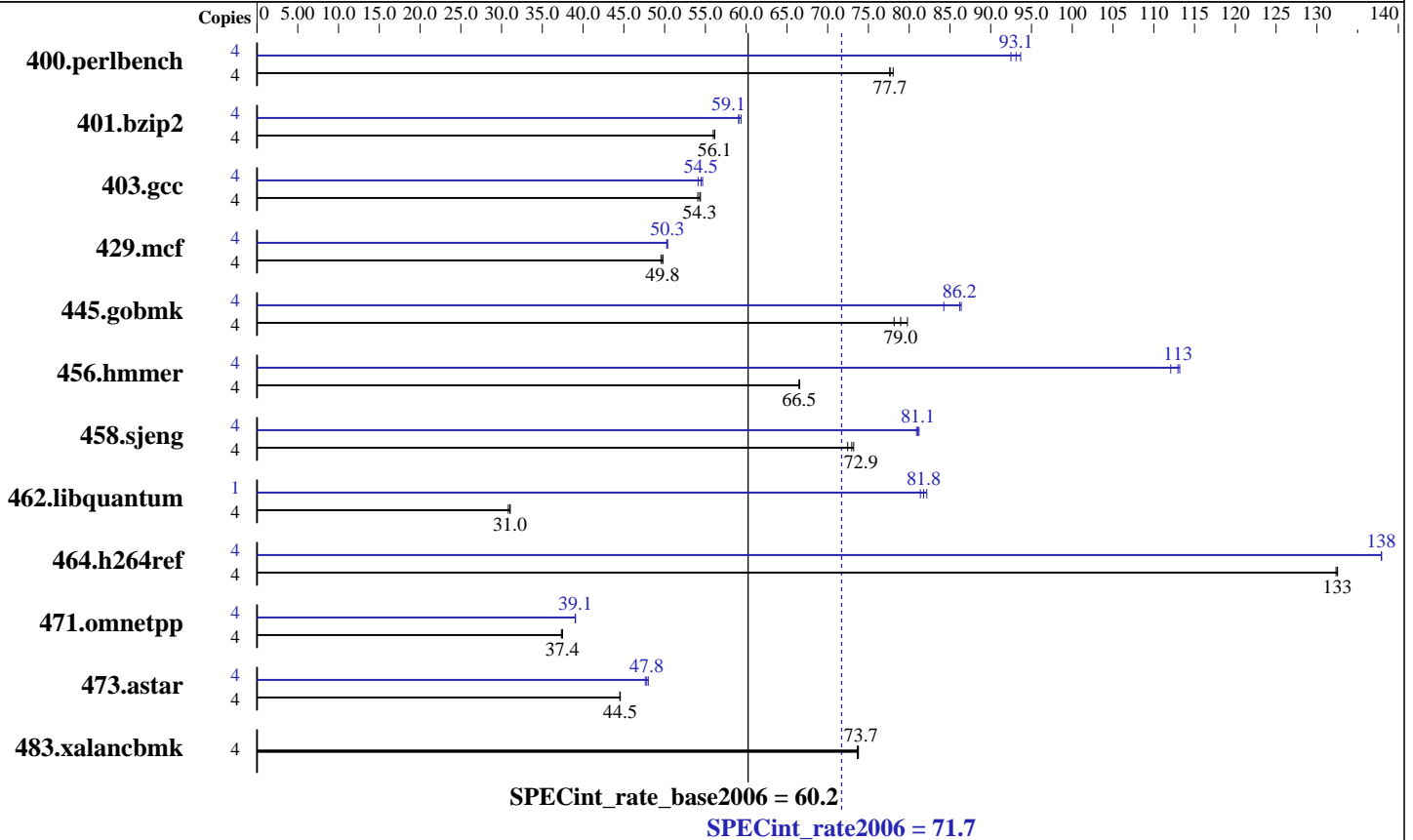
Test date: Apr-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jul-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 3.16 GHz, 2x6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3166
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 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: 32 GB (8x4 GB PC2-5300F CL5)
 Disk Subsystem: 1x72 GB 10 K SAS
 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	503	77.6	<u>503</u>	<u>77.7</u>	501	78.0	4	<u>420</u>	<u>93.1</u>	423	92.5	417	93.7
401.bzip2	4	<u>688</u>	<u>56.1</u>	690	56.0	687	56.1	4	650	59.4	<u>653</u>	<u>59.1</u>	653	59.1
403.gcc	4	592	54.4	596	54.1	<u>593</u>	<u>54.3</u>	4	589	54.7	<u>591</u>	<u>54.5</u>	595	54.1
429.mcf	4	<u>733</u>	<u>49.8</u>	736	49.5	733	49.8	4	<u>725</u>	<u>50.3</u>	726	50.3	724	50.4
445.gobmk	4	537	78.1	526	79.8	<u>531</u>	<u>79.0</u>	4	<u>487</u>	<u>86.2</u>	498	84.2	486	86.4
456.hammer	4	561	66.6	<u>561</u>	<u>66.5</u>	561	66.5	4	333	112	<u>330</u>	<u>113</u>	330	113
458.sjeng	4	<u>663</u>	<u>72.9</u>	661	73.2	668	72.5	4	<u>597</u>	<u>81.1</u>	598	80.9	596	81.2
462.libquantum	4	2689	30.8	<u>2671</u>	<u>31.0</u>	2669	31.1	1	252	82.2	<u>253</u>	<u>81.8</u>	255	81.4
464.h264ref	4	<u>668</u>	<u>133</u>	668	133	669	132	4	<u>642</u>	<u>138</u>	642	138	642	138
471.omnetpp	4	670	37.3	667	37.5	<u>668</u>	<u>37.4</u>	4	641	39.0	<u>640</u>	<u>39.1</u>	640	39.1
473.astar	4	631	44.5	<u>630</u>	<u>44.5</u>	630	44.6	4	<u>587</u>	<u>47.8</u>	590	47.6	585	48.0
483.xalancbmk	4	375	73.6	374	73.8	<u>374</u>	<u>73.7</u>	4	375	73.6	374	73.8	<u>374</u>	<u>73.7</u>

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:
Power Regulator set to Static High Performance Mode
Adjacent Sector Prefetch Disabled

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

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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: -fast -prefetch

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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