



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®2006 = 30.1

ProLiant ML370 G5
(3.33 GHz, Intel Xeon X5470)

SPECint_base2006 = 26.2

CPU2006 license: 3

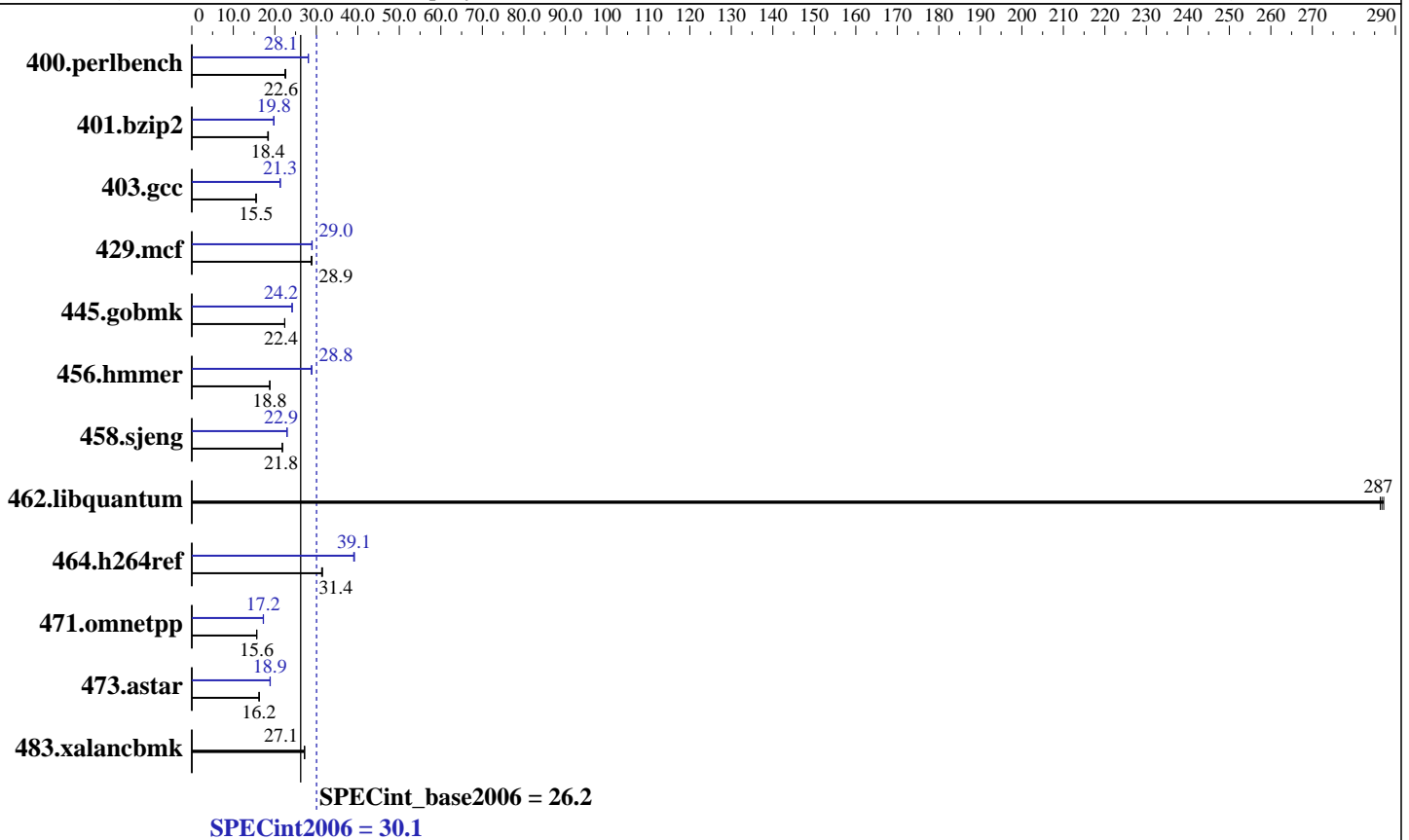
Test date: Aug-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X5470
 CPU Characteristics: 3.33 GHz, 2x6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3333
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 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: 16 GB (8x2 GB PC2-5300F CL5)
 Disk Subsystem: 1x72 GB 15 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 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 Library 8.1 Binutils 2.18.50.0.7.20080502



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<u>432</u>	<u>22.6</u>	436	22.4	432	22.6	<u>348</u>	<u>28.1</u>	348	28.1	348	28.1
401.bzip2	523	18.5	527	18.3	<u>525</u>	<u>18.4</u>	<u>488</u>	<u>19.8</u>	489	19.7	488	19.8
403.gcc	<u>519</u>	<u>15.5</u>	522	15.4	518	15.5	378	21.3	<u>378</u>	<u>21.3</u>	378	21.3
429.mcf	317	28.8	<u>316</u>	<u>28.9</u>	315	28.9	<u>315</u>	<u>29.0</u>	316	28.9	314	29.0
445.gobmk	468	22.4	469	22.4	<u>468</u>	<u>22.4</u>	<u>434</u>	<u>24.2</u>	434	24.2	434	24.2
456.hammer	497	18.8	497	18.8	<u>497</u>	<u>18.8</u>	<u>323</u>	<u>28.8</u>	323	28.9	323	28.8
458.sjeng	<u>555</u>	<u>21.8</u>	553	21.9	556	21.8	527	23.0	528	22.9	<u>527</u>	<u>22.9</u>
462.libquantum	<u>72.3</u>	<u>287</u>	72.1	287	72.4	286	<u>72.3</u>	<u>287</u>	72.1	287	72.4	286
464.h264ref	<u>705</u>	<u>31.4</u>	703	31.5	708	31.3	565	39.2	<u>566</u>	<u>39.1</u>	567	39.0
471.omnetpp	<u>400</u>	<u>15.6</u>	399	15.7	400	15.6	362	17.3	<u>363</u>	<u>17.2</u>	363	17.2
473.astar	<u>433</u>	<u>16.2</u>	432	16.3	434	16.2	371	18.9	373	18.8	<u>372</u>	<u>18.9</u>
483.xalancbmk	254	27.1	254	27.2	<u>254</u>	<u>27.1</u>	254	27.1	254	27.2	<u>254</u>	<u>27.1</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

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode

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



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Base Optimization Flags

C benchmarks:

```
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -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.perlbenc: -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:

Continued on next page



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Peak Optimization Flags (Continued)

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 -auto-ilp32 -opt-prefetch
-ansi-alias

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

429.mcf: -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.hmmcr: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias -auto-ilp32

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

462.libquantum: basepeak = yes

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/Intel-ic11.0-int-linux64-revD.20090713.00.html>

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090714.00.html>



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You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.20090713.00.xml>

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090714.00.xml>

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