



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

**SPECint®2006 = 26.5**

ProLiant BL480c  
(2.83 GHz, Intel Xeon E5440)

**SPECint\_base2006 = 23.2**

CPU2006 license: 3

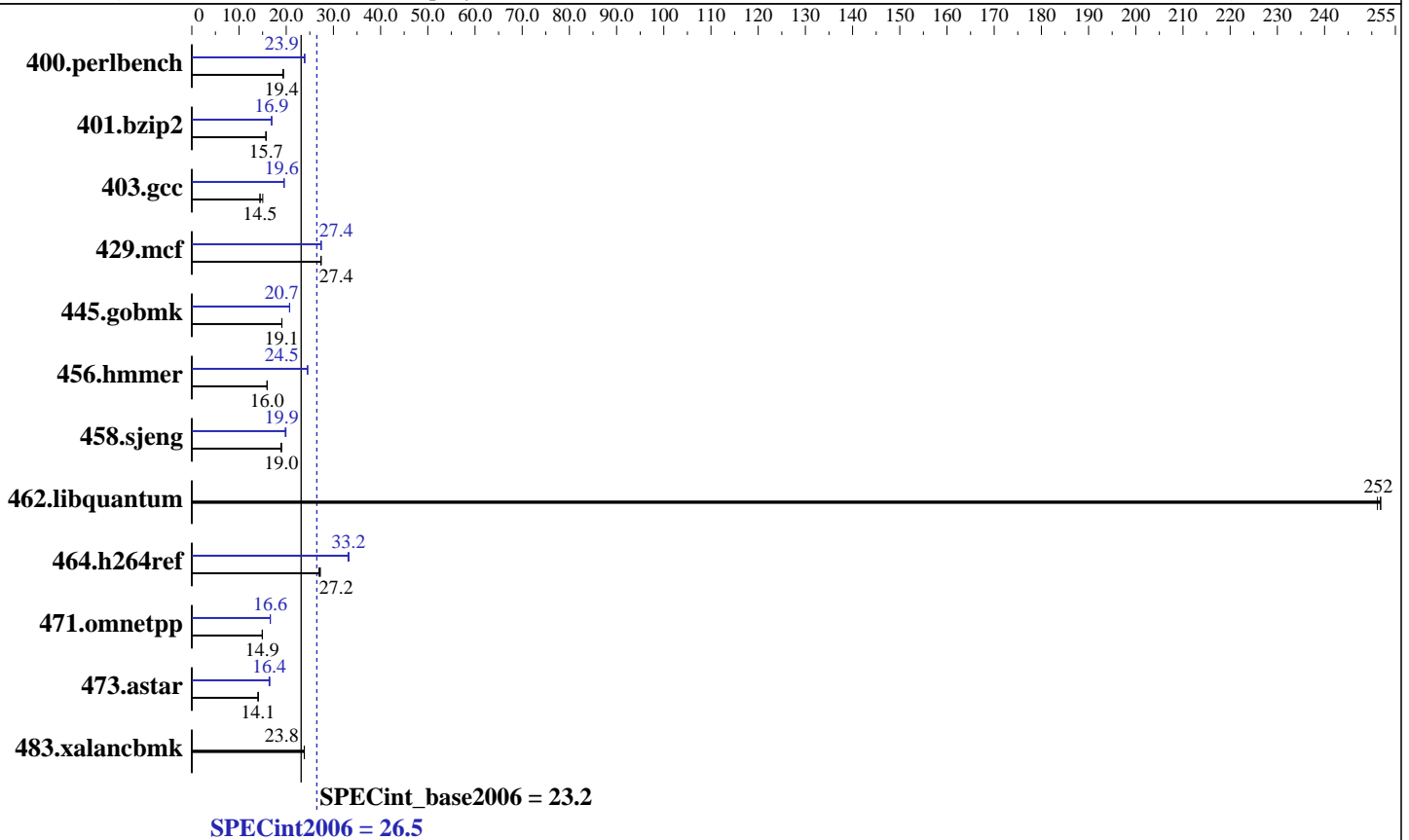
**Test date:** Sep-2008

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Sep-2008

**Tested by:** Hewlett-Packard Company

**Software Availability:** Nov-2008



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics: 2.83 GHz, 2x6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 2833  
 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: 2x72 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 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	507	19.3	<b>504</b>	<b>19.4</b>	503	19.4	408	23.9	410	23.9	<b>409</b>	<b>23.9</b>
401.bzip2	<b>613</b>	<b>15.7</b>	615	15.7	613	15.7	571	16.9	570	16.9	<b>571</b>	<b>16.9</b>
403.gcc	558	14.4	535	15.0	<b>556</b>	<b>14.5</b>	<b>412</b>	<b>19.6</b>	412	19.5	412	19.6
429.mcf	333	27.4	<b>333</b>	<b>27.4</b>	333	27.4	<b>333</b>	<b>27.4</b>	333	27.4	333	27.4
445.gobmk	550	19.1	<b>550</b>	<b>19.1</b>	549	19.1	506	20.7	507	20.7	<b>506</b>	<b>20.7</b>
456.hmmmer	585	16.0	<b>585</b>	<b>16.0</b>	585	15.9	<b>381</b>	<b>24.5</b>	381	24.5	380	24.5
458.sjeng	641	18.9	637	19.0	<b>638</b>	<b>19.0</b>	607	19.9	611	19.8	<b>609</b>	<b>19.9</b>
462.libquantum	<b>82.3</b>	<b>252</b>	82.3	252	82.5	251	<b>82.3</b>	<b>252</b>	82.3	252	82.5	251
464.h264ref	821	26.9	<b>814</b>	<b>27.2</b>	813	27.2	669	33.1	665	33.3	<b>666</b>	<b>33.2</b>
471.omnetpp	418	15.0	419	14.9	<b>419</b>	<b>14.9</b>	376	16.6	<b>376</b>	<b>16.6</b>	375	16.7
473.astar	499	14.1	500	14.0	<b>499</b>	<b>14.1</b>	425	16.5	429	16.4	<b>427</b>	<b>16.4</b>
483.xalancbmk	<b>290</b>	<b>23.8</b>	289	23.9	290	23.8	<b>290</b>	<b>23.8</b>	289	23.9	290	23.8

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

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer,  
for peak, are compiled in 64-bit mode

## Base Compiler Invocation

C benchmarks:  
icc  
  
C++ benchmarks:  
icpc



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## 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 -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.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc  
-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.hmmer: -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



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

You can also download the XML flags source by saving the following link:

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

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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