



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

SPECint®\_rate2006 = 73.0

ProLiant BL460c  
(3.16 GHz, Intel Xeon X5460)

SPECint\_rate\_base2006 = 61.8

CPU2006 license: 3

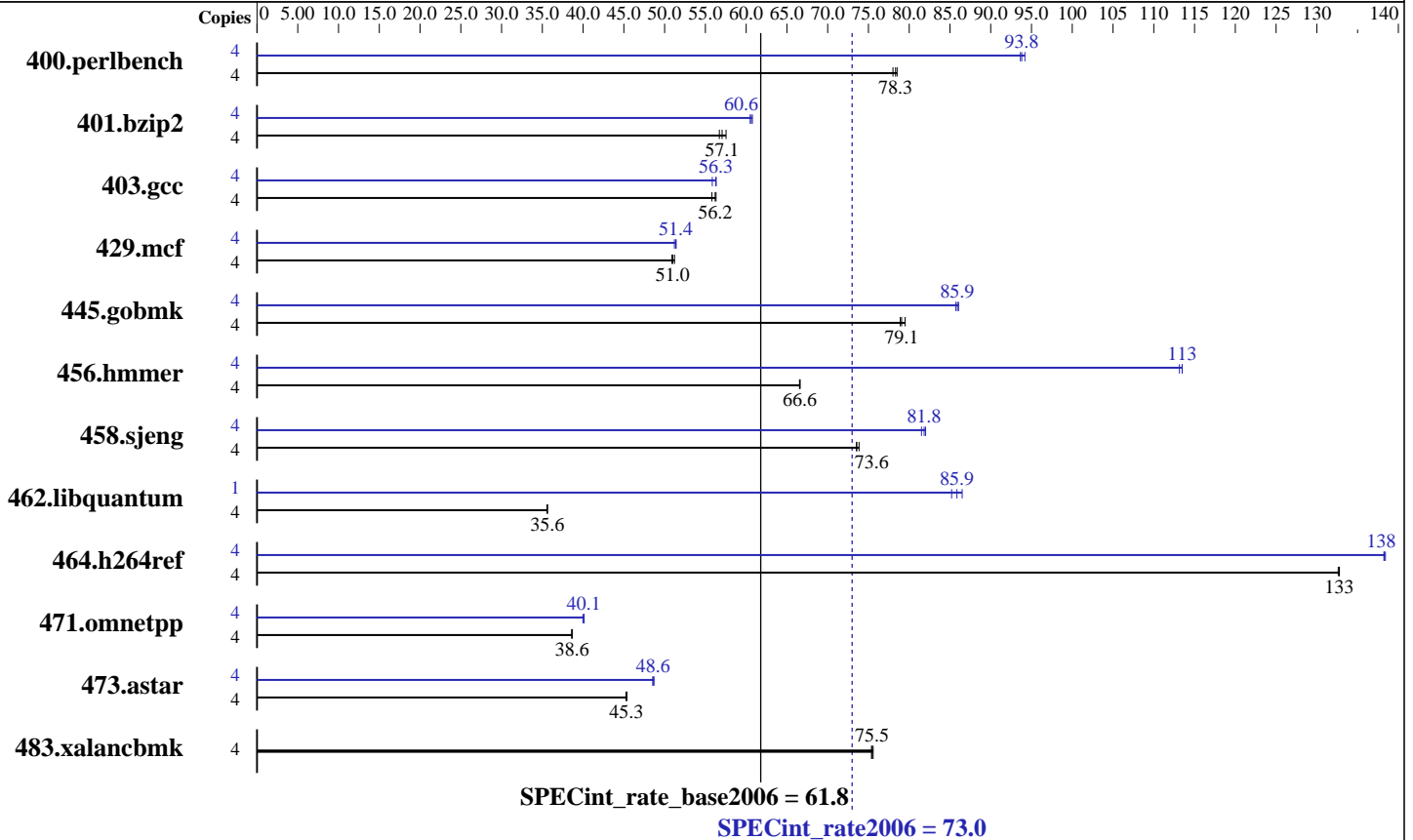
Test date: Jan-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jan-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: 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 for applications running on IA-32 and Intel 64, Version 10.1 Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Multi-user run level 3  
 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	501	78.0	<b><u>499</u></b>	<b><u>78.3</u></b>	498	78.5	4	417	93.6	<b><u>417</u></b>	<b><u>93.8</u></b>	415	94.2
401.bzip2	4	671	57.5	<b><u>677</u></b>	<b><u>57.1</u></b>	681	56.7	4	<b><u>637</u></b>	<b><u>60.6</u></b>	638	60.5	635	60.8
403.gcc	4	577	55.8	<b><u>573</u></b>	<b><u>56.2</u></b>	572	56.3	4	<b><u>572</u></b>	<b><u>56.3</u></b>	577	55.8	572	56.3
429.mcf	4	<b><u>715</u></b>	<b><u>51.0</u></b>	712	51.2	717	50.9	4	710	51.4	713	51.2	<b><u>710</u></b>	<b><u>51.4</u></b>
445.gobmk	4	528	79.5	<b><u>531</u></b>	<b><u>79.1</u></b>	532	78.9	4	489	85.7	<b><u>488</u></b>	<b><u>85.9</u></b>	488	86.1
456.hammer	4	561	66.5	<b><u>560</u></b>	<b><u>66.6</u></b>	560	66.6	4	329	113	<b><u>329</u></b>	<b><u>113</u></b>	330	113
458.sjeng	4	655	73.8	<b><u>658</u></b>	<b><u>73.6</u></b>	658	73.5	4	<b><u>591</u></b>	<b><u>81.8</u></b>	594	81.5	590	82.0
462.libquantum	4	2328	35.6	2328	35.6	<b><u>2328</u></b>	<b><u>35.6</u></b>	1	240	86.5	<b><u>241</u></b>	<b><u>85.9</u></b>	243	85.2
464.h264ref	4	<b><u>667</u></b>	<b><u>133</u></b>	667	133	667	133	4	<b><u>640</u></b>	<b><u>138</u></b>	640	138	640	138
471.omnetpp	4	648	38.6	647	38.7	<b><u>647</u></b>	<b><u>38.6</u></b>	4	<b><u>623</u></b>	<b><u>40.1</u></b>	623	40.1	625	40.0
473.astar	4	<b><u>620</u></b>	<b><u>45.3</u></b>	619	45.4	620	45.3	4	577	48.7	578	48.5	<b><u>578</u></b>	<b><u>48.6</u></b>
483.xalancbmk	4	<b><u>366</u></b>	<b><u>75.5</u></b>	365	75.6	366	75.4	4	<b><u>366</u></b>	<b><u>75.5</u></b>	365	75.6	366	75.4

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.20090714.00.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.20090714.00.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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