



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

SPECint®\_rate2006 = 84.3

ProLiant DL320 G5p  
(3.00 GHz, Intel Xeon X3370)

SPECint\_rate\_base2006 = 78.7

CPU2006 license: 3

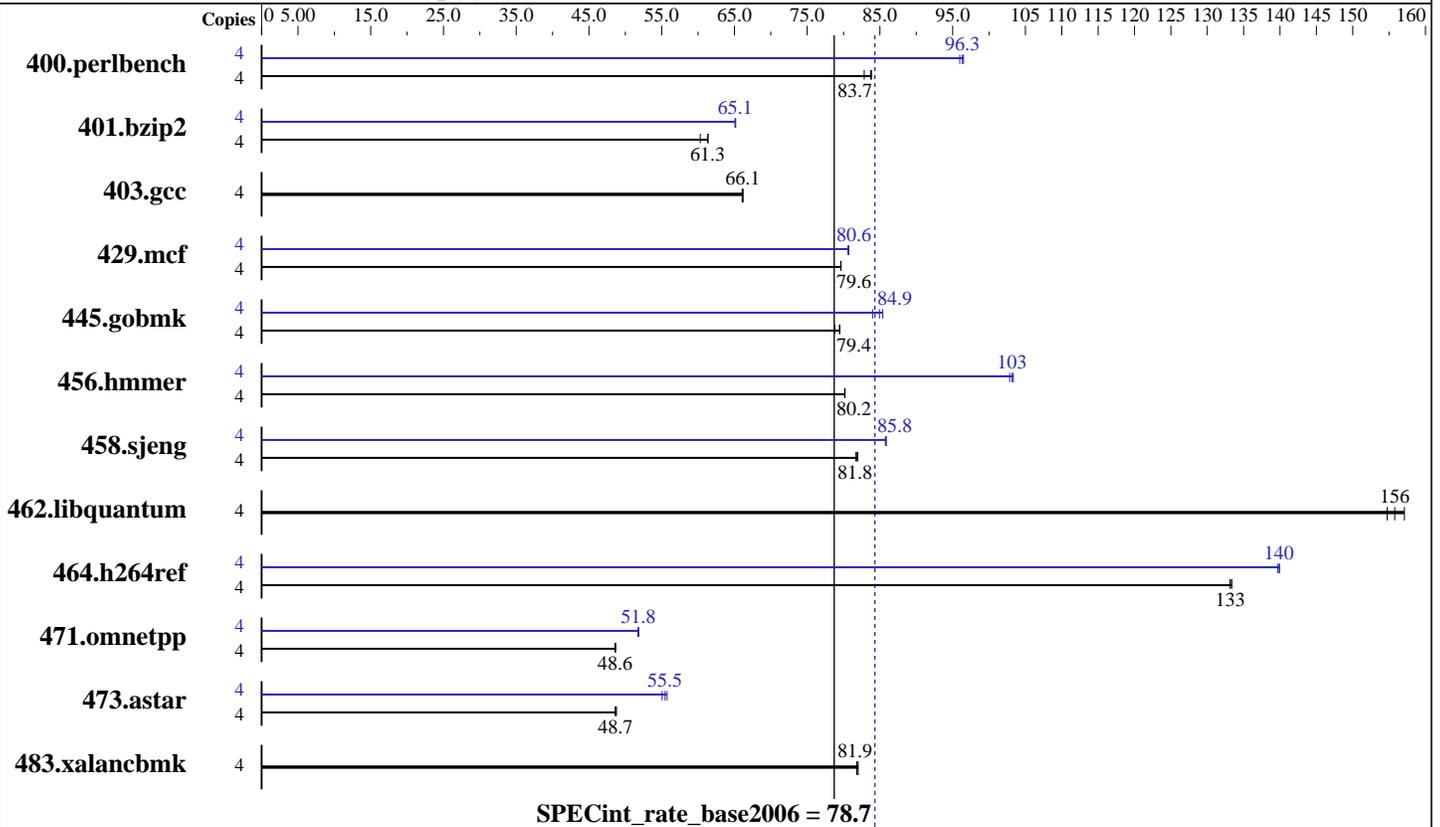
Test date: Sep-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon X3370  
 CPU Characteristics: 3.0 GHz, 2x6MB L2 shared, 1333 MHz system bus  
 CPU MHz: 3000  
 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 CL6)  
 Disk Subsystem: 250 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 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502



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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	472	82.8	466	83.8	<b>467</b>	<b>83.7</b>	4	<b>406</b>	<b>96.3</b>	405	96.5	407	96.0
401.bzip2	4	640	60.3	629	61.4	<b>629</b>	<b>61.3</b>	4	592	65.2	<b>593</b>	<b>65.1</b>	593	65.1
403.gcc	4	487	66.1	487	66.2	<b>487</b>	<b>66.1</b>	4	487	66.1	487	66.2	<b>487</b>	<b>66.1</b>
429.mcf	4	458	79.6	<b>458</b>	<b>79.6</b>	458	79.7	4	452	80.7	452	80.6	<b>452</b>	<b>80.6</b>
445.gobmk	4	528	79.5	<b>528</b>	<b>79.4</b>	532	78.8	4	<b>494</b>	<b>84.9</b>	491	85.4	500	84.0
456.hmmmer	4	466	80.2	<b>466</b>	<b>80.2</b>	465	80.2	4	<b>362</b>	<b>103</b>	361	103	363	103
458.sjeng	4	592	81.7	<b>592</b>	<b>81.8</b>	591	82.0	4	<b>564</b>	<b>85.8</b>	564	85.8	564	85.9
462.libquantum	4	528	157	<b>532</b>	<b>156</b>	536	155	4	528	157	<b>532</b>	<b>156</b>	536	155
464.h264ref	4	665	133	<b>665</b>	<b>133</b>	664	133	4	634	140	633	140	<b>633</b>	<b>140</b>
471.omnetpp	4	<b>514</b>	<b>48.6</b>	514	48.7	515	48.6	4	<b>483</b>	<b>51.8</b>	482	51.9	483	51.7
473.astar	4	576	48.8	578	48.6	<b>577</b>	<b>48.7</b>	4	510	55.1	<b>506</b>	<b>55.5</b>	504	55.7
483.xalancbmk	4	<b>337</b>	<b>81.9</b>	337	82.0	337	81.8	4	<b>337</b>	<b>81.9</b>	337	82.0	337	81.8

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.  
taskset was used to bind processes to cores except  
for 462.libquantum peak

## Platform Notes

BIOS configuration:  
Adjacent Sector Prefetch Disabled  
Hardware Prefetcher Disabled

## 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 -inline-calloc  
-opt-malloc-options=3 -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 -opt-prefetch -ansi-alias

403.gcc: basepeak = yes

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -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

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 files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.00.html>

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.20090713.01.html>

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

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090713.00.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.20090713.01.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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