



# SPEC<sup>®</sup> CINT2006 Result

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## Hewlett-Packard Company

SPECint<sup>®</sup>\_rate2006 = 42.9

ProLiant DL320 G5p  
(3.0 GHz, Intel Xeon E3110)

SPECint\_rate\_base2006 = 36.5

CPU2006 license: 3

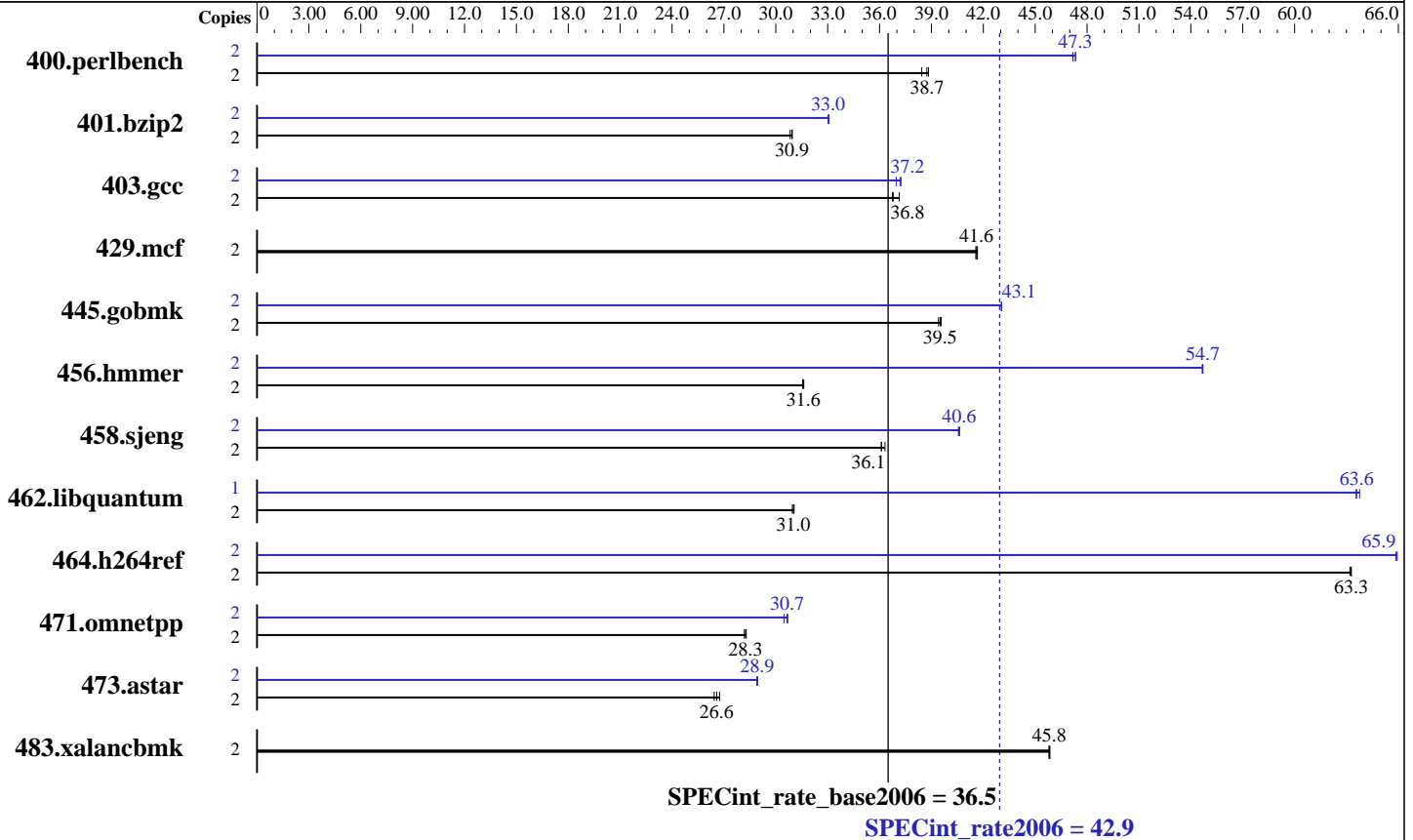
Test date: May-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E3110  
 CPU Characteristics: 3.0 GHz, 6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (4x2 GB PC2-6400E CL5)  
 Disk Subsystem: 1 x 80 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 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	2	508	38.4	<b><u>504</u></b>	<b><u>38.7</u></b>	503	38.8	2	<b><u>413</u></b>	<b><u>47.3</u></b>	413	47.3	414	47.2
401.bzip2	2	<b><u>624</u></b>	<b><u>30.9</u></b>	624	31.0	626	30.8	2	584	33.0	583	33.1	<b><u>584</u></b>	<b><u>33.0</u></b>
403.gcc	2	434	37.1	438	36.7	<b><u>438</u></b>	<b><u>36.8</u></b>	2	432	37.2	436	37.0	<b><u>433</u></b>	<b><u>37.2</u></b>
429.mcf	2	439	41.6	<b><u>438</u></b>	<b><u>41.6</u></b>	438	41.7	2	439	41.6	<b><u>438</u></b>	<b><u>41.6</u></b>	438	41.7
445.gobmk	2	<b><u>531</u></b>	<b><u>39.5</u></b>	530	39.6	532	39.4	2	<b><u>487</u></b>	<b><u>43.1</u></b>	487	43.1	487	43.0
456.hammer	2	591	31.6	<b><u>591</u></b>	<b><u>31.6</u></b>	590	31.6	2	341	54.7	341	54.7	<b><u>341</u></b>	<b><u>54.7</u></b>
458.sjeng	2	670	36.1	666	36.3	<b><u>670</u></b>	<b><u>36.1</u></b>	2	<b><u>596</u></b>	<b><u>40.6</u></b>	597	40.6	596	40.6
462.libquantum	2	1339	31.0	<b><u>1336</u></b>	<b><u>31.0</u></b>	1334	31.1	1	325	63.8	326	63.6	<b><u>326</u></b>	<b><u>63.6</u></b>
464.h264ref	2	700	63.2	699	63.3	<b><u>700</u></b>	<b><u>63.3</u></b>	2	671	65.9	<b><u>672</u></b>	<b><u>65.9</u></b>	672	65.9
471.omnetpp	2	442	28.3	<b><u>442</u></b>	<b><u>28.3</u></b>	444	28.2	2	<b><u>408</u></b>	<b><u>30.7</u></b>	407	30.7	410	30.5
473.astar	2	<b><u>528</u></b>	<b><u>26.6</u></b>	531	26.4	525	26.8	2	<b><u>485</u></b>	<b><u>28.9</u></b>	485	28.9	486	28.9
483.xalancbmk	2	301	45.9	<b><u>301</u></b>	<b><u>45.8</u></b>	301	45.8	2	301	45.9	<b><u>301</u></b>	<b><u>45.8</u></b>	301	45.8

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
KMP_STACKSIZE set to 64M
```

## Platform Notes

BIOS configuration:  
Power Regulator set to Dynamic Power Savings 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-alloc -opt-malloc-options=3

429.mcf: basepeak = yes

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

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