



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

SPECint®\_rate2006 = 87.9

ProLiant DL160 G5  
(3.4 GHz, Intel Xeon X5272)

SPECint\_rate\_base2006 = 74.8

CPU2006 license: 3

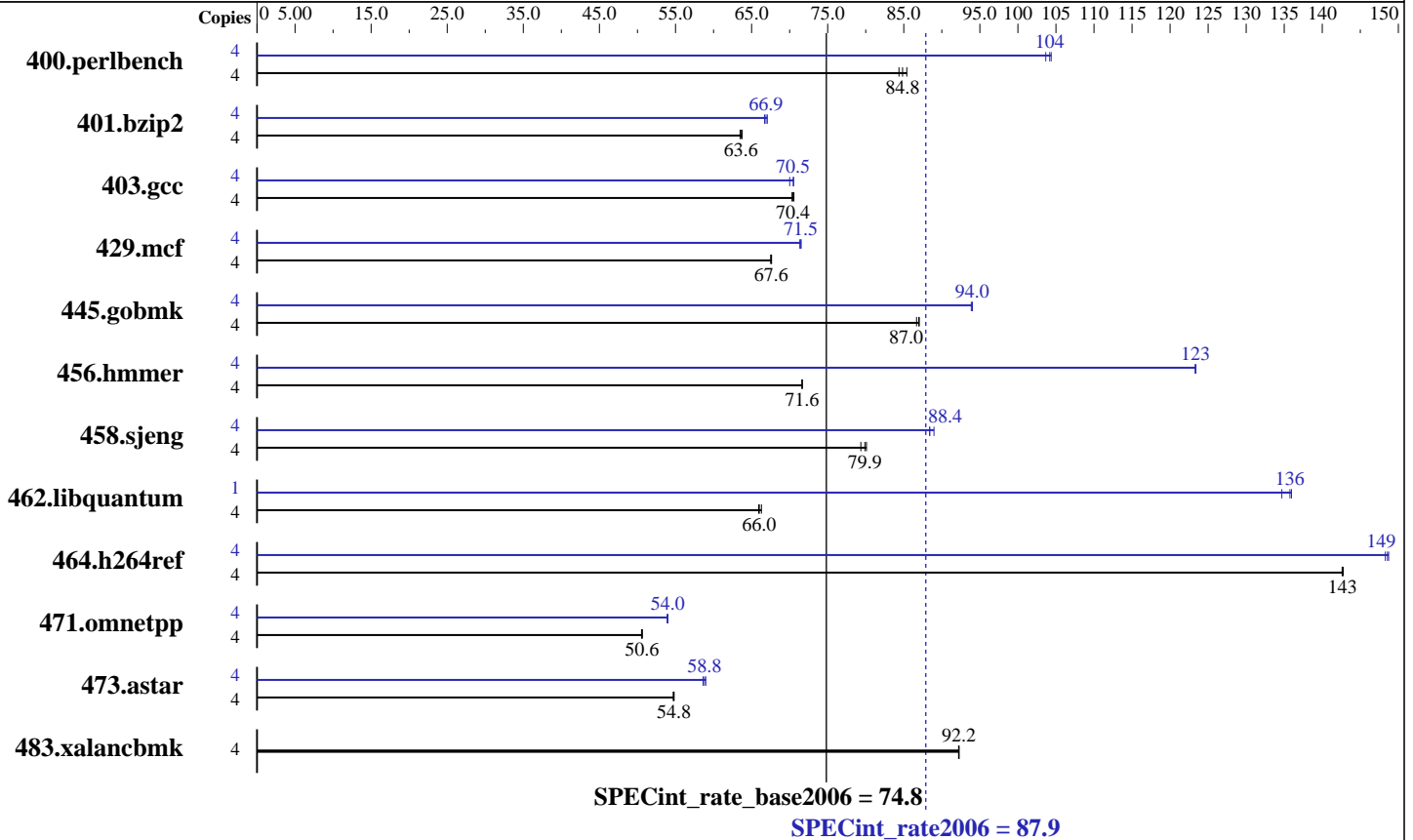
Test date: Jul-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: May-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5272  
 CPU Characteristics: 3.4 GHz, 6 MB L2 shared, 1600 MHz system bus  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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: 32 GB (8x4 GB PC2-6400F CL6)  
 Disk Subsystem: 1x250 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  | 4      | <b>461</b>  | <b>84.8</b> | 458        | 85.4        | 463        | 84.4        | 4      | <b>375</b> | <b>104</b>  | 377        | 104         | 374        | 104         |
| 401.bzip2      | 4      | 605         | 63.8        | 608        | 63.5        | <b>607</b> | <b>63.6</b> | 4      | <b>577</b> | <b>66.9</b> | 576        | 67.1        | 579        | 66.7        |
| 403.gcc        | 4      | 458         | 70.3        | <b>457</b> | <b>70.4</b> | 456        | 70.6        | 4      | 460        | 70.0        | 457        | 70.5        | <b>457</b> | <b>70.5</b> |
| 429.mcf        | 4      | 540         | 67.5        | 539        | 67.6        | <b>540</b> | <b>67.6</b> | 4      | 510        | 71.5        | 511        | 71.3        | <b>510</b> | <b>71.5</b> |
| 445.gobmk      | 4      | 484         | 86.7        | 482        | 87.0        | <b>482</b> | <b>87.0</b> | 4      | 447        | 93.9        | 446        | 94.0        | <b>446</b> | <b>94.0</b> |
| 456.hammer     | 4      | 521         | 71.6        | 521        | 71.6        | <b>521</b> | <b>71.6</b> | 4      | <b>303</b> | <b>123</b>  | 303        | 123         | 302        | 123         |
| 458.sjeng      | 4      | 604         | 80.1        | <b>606</b> | <b>79.9</b> | 610        | 79.4        | 4      | <b>547</b> | <b>88.4</b> | 544        | 89.0        | 547        | 88.4        |
| 462.libquantum | 4      | <b>1255</b> | <b>66.0</b> | 1250       | 66.3        | 1257       | 65.9        | 1      | 152        | 136         | <b>153</b> | <b>136</b>  | 154        | 135         |
| 464.h264ref    | 4      | 620         | 143         | 621        | 143         | <b>621</b> | <b>143</b>  | 4      | <b>596</b> | <b>149</b>  | 595        | 149         | 597        | 148         |
| 471.omnetpp    | 4      | <b>494</b>  | <b>50.6</b> | 495        | 50.5        | 494        | 50.6        | 4      | 463        | 54.0        | <b>463</b> | <b>54.0</b> | 464        | 53.9        |
| 473.astar      | 4      | 512         | 54.8        | 513        | 54.7        | <b>513</b> | <b>54.8</b> | 4      | 479        | 58.6        | <b>477</b> | <b>58.8</b> | 476        | 59.0        |
| 483.xalancbmk  | 4      | <b>299</b>  | <b>92.2</b> | 299        | 92.2        | 299        | 92.3        | 4      | <b>299</b> | <b>92.2</b> | 299        | 92.2        | 299        | 92.3        |

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.20090713.00.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.20090713.00.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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