



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

### SPECint®\_rate2006 = 71.5

ProLiant DL120 G5  
(2.66 GHz, Intel Xeon X3350)

### SPECint\_rate\_base2006 = 60.0

CPU2006 license: 3

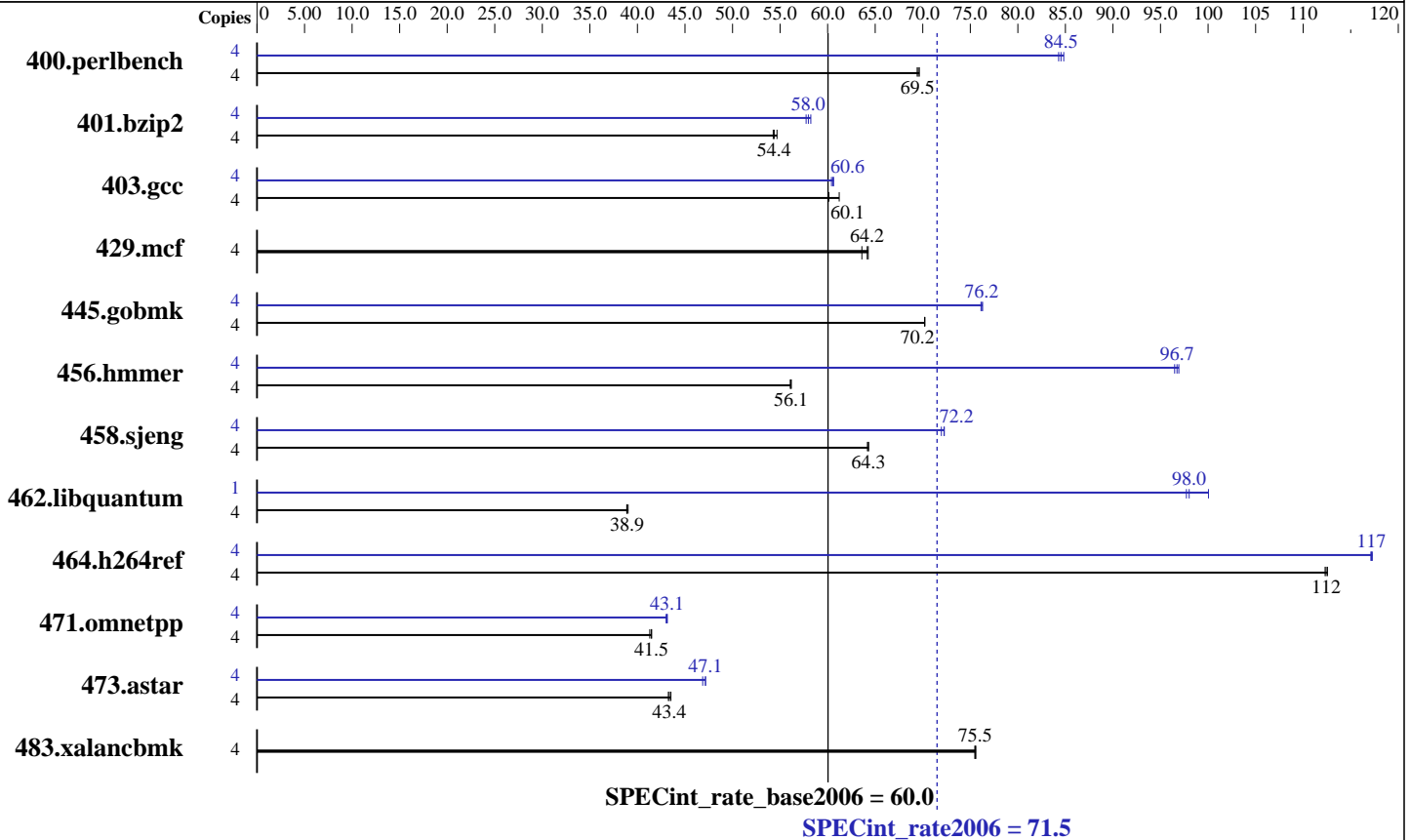
Test date: Jun-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X3350  
 CPU Characteristics: 2.66 GHz, 2x6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 2666  
 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: 1x160 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>562</b> | <b>69.5</b> | 563         | 69.4        | 561        | 69.6        | 4      | 461        | 84.8        | 464        | 84.3        | <b>462</b> | <b>84.5</b> |
| 401.bzip2      | 4      | 711        | 54.3        | 706         | 54.7        | <b>710</b> | <b>54.4</b> | 4      | 669        | 57.7        | <b>666</b> | <b>58.0</b> | 663        | 58.2        |
| 403.gcc        | 4      | 526        | 61.2        | <b>535</b>  | <b>60.1</b> | 536        | 60.1        | 4      | <b>532</b> | <b>60.6</b> | 533        | 60.4        | 531        | 60.6        |
| 429.mcf        | 4      | 574        | 63.6        | <b>569</b>  | <b>64.2</b> | 568        | 64.3        | 4      | 574        | 63.6        | <b>569</b> | <b>64.2</b> | 568        | 64.3        |
| 445.gobmk      | 4      | <b>598</b> | <b>70.2</b> | 598         | 70.2        | 598        | 70.2        | 4      | 551        | 76.1        | 550        | 76.3        | <b>551</b> | <b>76.2</b> |
| 456.hammer     | 4      | <b>665</b> | <b>56.1</b> | 664         | 56.2        | 666        | 56.1        | 4      | <b>386</b> | <b>96.7</b> | 385        | 96.9        | 387        | 96.5        |
| 458.sjeng      | 4      | 753        | 64.3        | <b>753</b>  | <b>64.3</b> | 754        | 64.2        | 4      | 673        | 72.0        | <b>670</b> | <b>72.2</b> | 670        | 72.3        |
| 462.libquantum | 4      | 2132       | 38.9        | <b>2131</b> | <b>38.9</b> | 2124       | 39.0        | 1      | 212        | 97.7        | 207        | 100         | <b>211</b> | <b>98.0</b> |
| 464.h264ref    | 4      | 786        | 113         | <b>787</b>  | <b>112</b>  | 788        | 112         | 4      | <b>755</b> | <b>117</b>  | 756        | 117         | 755        | 117         |
| 471.omnetpp    | 4      | 603        | 41.5        | 605         | 41.3        | <b>603</b> | <b>41.5</b> | 4      | <b>580</b> | <b>43.1</b> | 579        | 43.1        | 581        | 43.0        |
| 473.astar      | 4      | 645        | 43.5        | <b>648</b>  | <b>43.4</b> | 649        | 43.3        | 4      | 595        | 47.2        | 599        | 46.9        | <b>596</b> | <b>47.1</b> |
| 483.xalancbmk  | 4      | 365        | 75.6        | <b>365</b>  | <b>75.5</b> | 366        | 75.5        | 4      | 365        | 75.6        | <b>365</b> | <b>75.5</b> | 366        | 75.5        |

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:  
Adjacent Cache Line Prefetch Disabled

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX

Continued on next page



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## Base Portability Flags (Continued)

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: 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.20090713.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.xml>

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

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