



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

**SPECint®2006 = 25.1**

ProLiant ML310 G5  
(2.83 GHz, Intel Xeon X3360)

**SPECint\_base2006 = 21.0**

CPU2006 license: 3

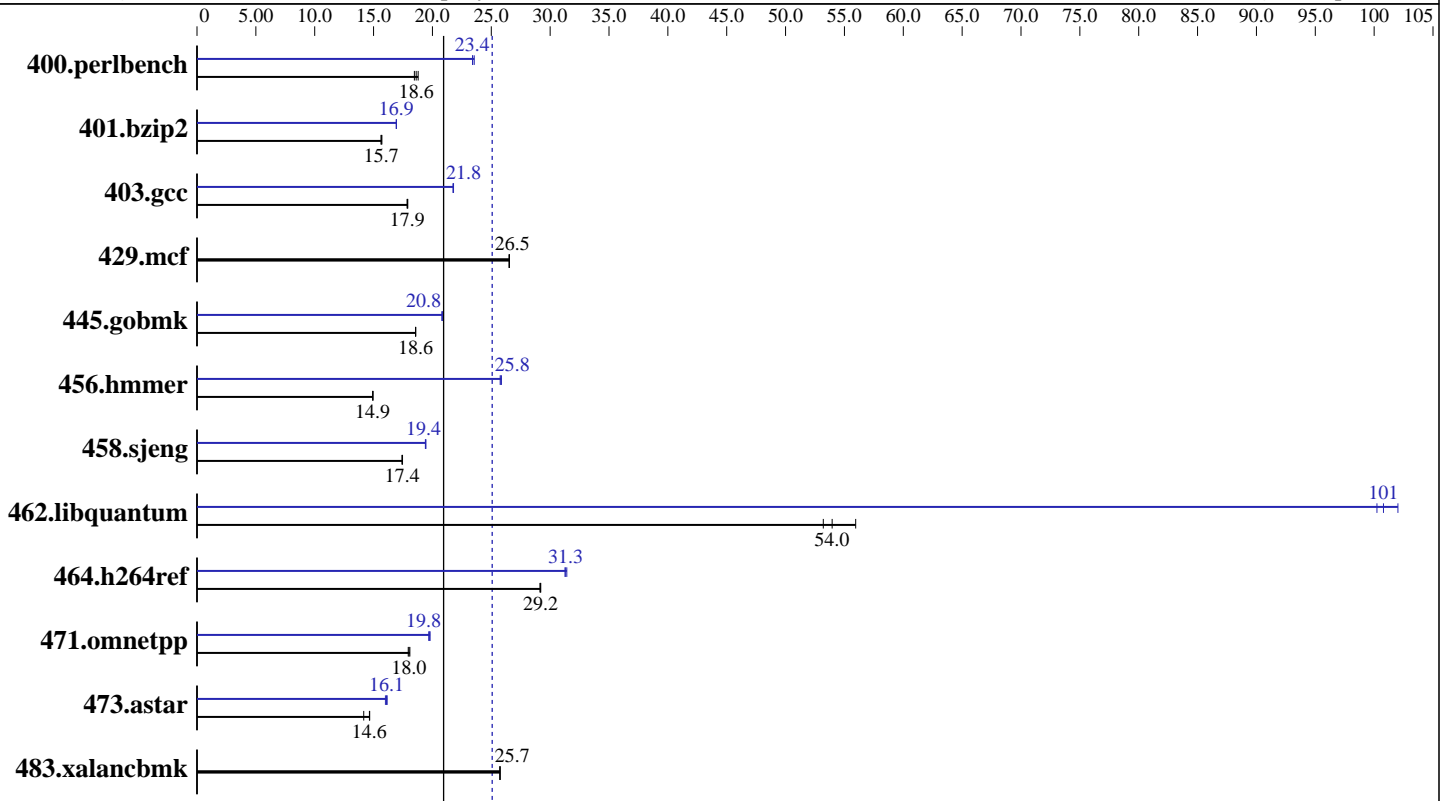
Test date: Apr-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: May-2008

Tested by: Hewlett-Packard Company

Software Availability: Sep-2007



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### Hardware

CPU Name: Intel Xeon X3360  
 CPU Characteristics: 2.83 GHz, 2x6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 2833  
 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 CL5)  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>525</u></b>	<b><u>18.6</u></b>	520	18.8	529	18.5	415	23.6	417	23.4	<b><u>417</u></b>	<b><u>23.4</u></b>
401.bzip2	617	15.6	<b><u>616</u></b>	<b><u>15.7</u></b>	614	15.7	<b><u>570</u></b>	<b><u>16.9</u></b>	570	16.9	570	16.9
403.gcc	451	17.8	<b><u>450</u></b>	<b><u>17.9</u></b>	450	17.9	369	21.8	370	21.8	<b><u>370</u></b>	<b><u>21.8</u></b>
429.mcf	<b><u>344</u></b>	<b><u>26.5</u></b>	344	26.5	344	26.5	<b><u>344</u></b>	<b><u>26.5</u></b>	344	26.5	344	26.5
445.gobmk	<b><u>565</u></b>	<b><u>18.6</u></b>	565	18.6	565	18.6	504	20.8	<b><u>504</u></b>	<b><u>20.8</u></b>	504	20.8
456.hammer	<b><u>625</u></b>	<b><u>14.9</u></b>	625	14.9	624	14.9	<b><u>361</u></b>	<b><u>25.8</u></b>	361	25.9	362	25.8
458.sjeng	694	17.4	<b><u>694</u></b>	<b><u>17.4</u></b>	693	17.5	622	19.4	624	19.4	<b><u>623</u></b>	<b><u>19.4</u></b>
462.libquantum	370	56.0	<b><u>384</u></b>	<b><u>54.0</u></b>	389	53.2	<b><u>206</u></b>	<b><u>101</u></b>	203	102	207	100
464.h264ref	758	29.2	<b><u>758</u></b>	<b><u>29.2</u></b>	760	29.1	708	31.3	704	31.4	<b><u>707</u></b>	<b><u>31.3</u></b>
471.omnetpp	348	17.9	346	18.1	<b><u>347</u></b>	<b><u>18.0</u></b>	316	19.8	<b><u>316</u></b>	<b><u>19.8</u></b>	318	19.7
473.astar	<b><u>479</u></b>	<b><u>14.6</u></b>	479	14.7	496	14.2	<b><u>436</u></b>	<b><u>16.1</u></b>	439	16.0	435	16.2
483.xalancbmk	268	25.7	<b><u>268</u></b>	<b><u>25.7</u></b>	268	25.7	268	25.7	<b><u>268</u></b>	<b><u>25.7</u></b>	268	25.7

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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

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



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## Base Optimization Flags

C benchmarks:

```
-fast -vec-guard-write -opt-malloc-options=3 -parallel
-par-runtime-control
```

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.perlbenc: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

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  
-auto-ilp32

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  
-auto-ilp32

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

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