



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

ProLiant DL320 G5p  
(3.0 GHz, Intel Xeon E3110)

**SPECint®2006 = 25.2**

**SPECint\_base2006 = 21.6**

CPU2006 license: 3

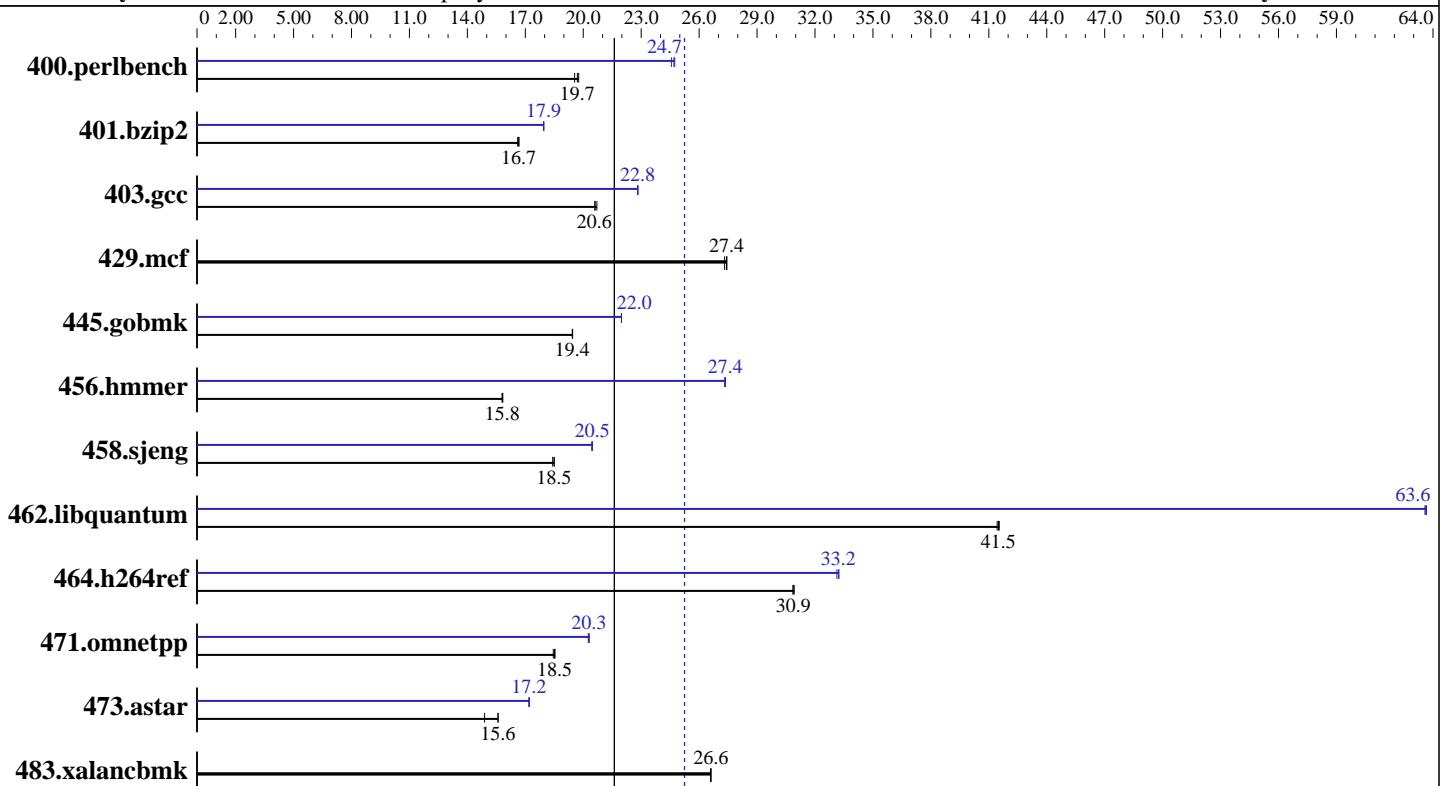
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

**Test date:** May-2008

**Hardware Availability:** Mar-2008

**Software Availability:** Nov-2007



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### 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					
	Seconds	Ratio										
400.perlbench	500	19.6	494	19.8	<b>496</b>	<b>19.7</b>	395	24.7	398	24.6	<b>396</b>	<b>24.7</b>
401.bzip2	<b>579</b>	<b>16.7</b>	579	16.7	581	16.6	<b>538</b>	<b>17.9</b>	<b>537</b>	<b>18.0</b>	<b>538</b>	<b>17.9</b>
403.gcc	<b>391</b>	<b>20.6</b>	389	20.7	391	20.6	<b>352</b>	<b>22.8</b>	<b>353</b>	<b>22.8</b>	<b>353</b>	<b>22.8</b>
429.mcf	332	27.4	<b>333</b>	<b>27.4</b>	334	27.3	<b>332</b>	<b>27.4</b>	<b>333</b>	<b>27.4</b>	334	27.3
445.gobmk	539	19.5	<b>540</b>	<b>19.4</b>	540	19.4	<b>477</b>	<b>22.0</b>	<b>477</b>	<b>22.0</b>	477	22.0
456.hmmer	589	15.8	590	15.8	<b>590</b>	<b>15.8</b>	<b>341</b>	<b>27.4</b>	341	27.4	342	27.3
458.sjeng	654	18.5	<b>654</b>	<b>18.5</b>	657	18.4	<b>591</b>	<b>20.5</b>	592	20.4	591	20.5
462.libquantum	500	41.4	<b>499</b>	<b>41.5</b>	499	41.5	<b>325</b>	<b>63.7</b>	<b>326</b>	<b>63.6</b>	<b>326</b>	<b>63.6</b>
464.h264ref	716	30.9	717	30.9	<b>717</b>	<b>30.9</b>	<b>666</b>	<b>33.2</b>	668	33.1	666	33.2
471.omnetpp	337	18.5	<b>338</b>	<b>18.5</b>	339	18.4	<b>308</b>	<b>20.3</b>	308	20.3	<b>308</b>	<b>20.3</b>
473.astar	<b>450</b>	<b>15.6</b>	450	15.6	471	14.9	<b>408</b>	<b>17.2</b>	408	17.2	<b>408</b>	<b>17.2</b>
483.xalancbmk	<b>259</b>	<b>26.6</b>	259	26.6	259	26.6	<b>259</b>	<b>26.6</b>	259	26.6	259	26.6

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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

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

462.libquantum: -DSPEC\_CPU\_LINUX

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## Base Portability Flags (Continued)

483.xalancbmk: -DSPEC\_CPU\_LINUX

## 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.hmmr: /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.hmmr: -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  
-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.jeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -O0 -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



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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>

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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