



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

## SPECint®\_rate2006 = 198

ProLiant ML370 G6  
(2.27 GHz, Intel Xeon E5520)

## SPECint\_rate\_base2006 = 183

CPU2006 license: 3

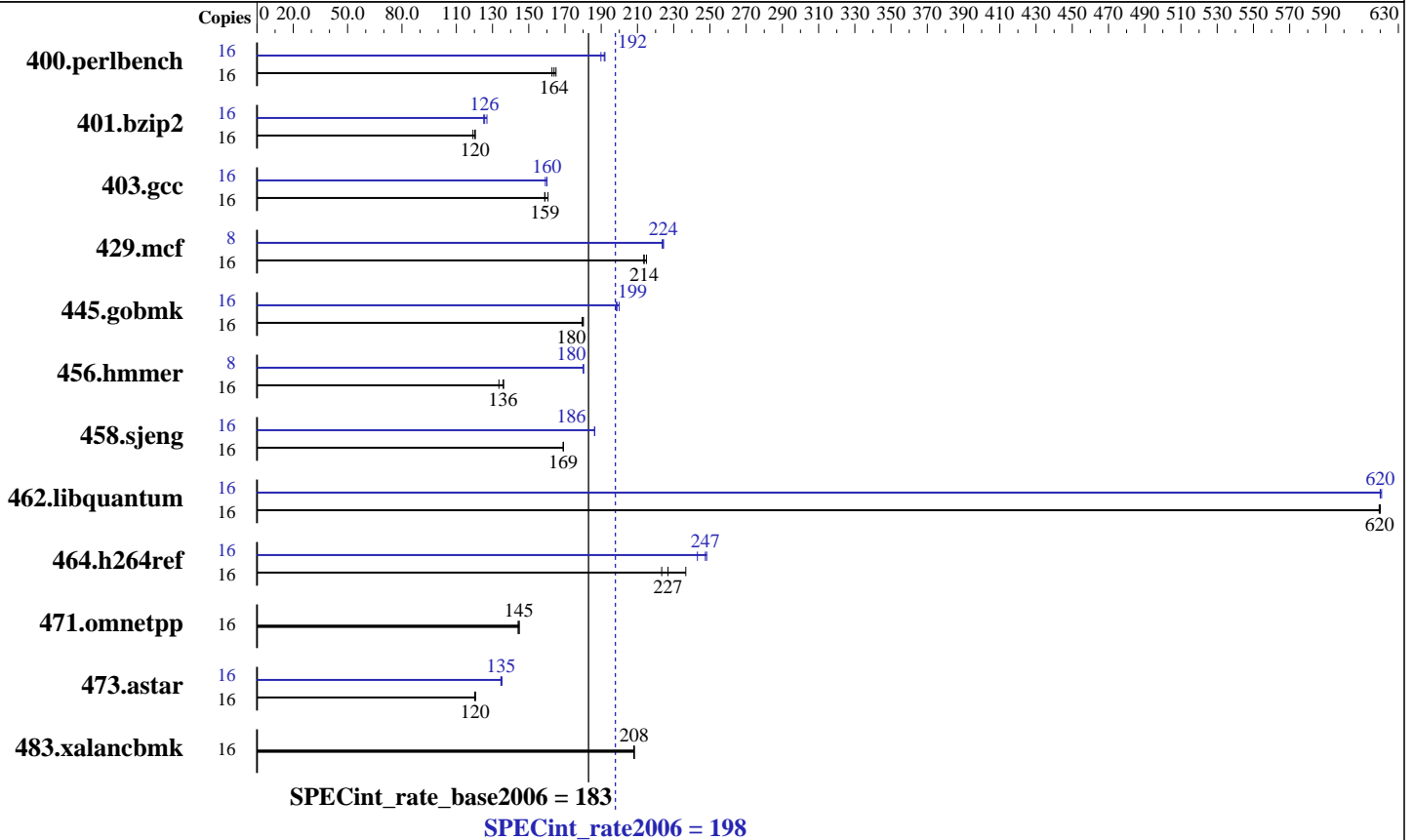
Test date: Jun-2009

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2009

Tested by: Hewlett-Packard Company

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon E5520  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz  
 CPU MHz: 2266  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6x4 GB PC3-10600R CL9, running at 1066 MHz)  
 Disk Subsystem: 1x146 GB 10 K RPM SAS  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Advanced Platform, Kernel 2.6.18-128.el5  
 Compiler: Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502



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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	16	960	163	<u>953</u>	<u>164</u>	947	165	16	823	190	814	192	<u>816</u>	<u>192</u>
401.bzip2	16	1295	119	<u>1284</u>	<u>120</u>	1281	121	16	1234	125	<u>1229</u>	<u>126</u>	1217	127
403.gcc	16	802	161	811	159	<u>811</u>	<u>159</u>	16	<u>805</u>	<u>160</u>	805	160	809	159
429.mcf	16	679	215	<u>683</u>	<u>214</u>	683	214	8	<u>325</u>	<u>224</u>	325	224	326	224
445.gobmk	16	935	179	<u>933</u>	<u>180</u>	932	180	16	839	200	<u>845</u>	<u>199</u>	846	198
456.hammer	16	1118	134	<u>1099</u>	<u>136</u>	1097	136	8	415	180	<u>414</u>	<u>180</u>	414	180
458.sjeng	16	<u>1145</u>	<u>169</u>	1145	169	1146	169	16	<u>1039</u>	<u>186</u>	1038	186	1039	186
462.libquantum	16	535	619	535	620	<u>535</u>	<u>620</u>	16	534	621	<u>535</u>	<u>620</u>	535	620
464.h264ref	16	1496	237	<u>1561</u>	<u>227</u>	1585	223	16	<u>1431</u>	<u>247</u>	1427	248	1457	243
471.omnetpp	16	691	145	694	144	<u>692</u>	<u>145</u>	16	691	145	694	144	<u>692</u>	<u>145</u>
473.astar	16	935	120	<u>933</u>	<u>120</u>	931	121	16	831	135	<u>834</u>	<u>135</u>	834	135
483.xalancbmk	16	530	208	<u>531</u>	<u>208</u>	531	208	16	530	208	<u>531</u>	<u>208</u>	531	208

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

### Submit Notes

The config file option 'submit' was used.  
numactl was used to bind copies to the cores

### Platform Notes

BIOS configuration:  
HP Power Regulator set to Static High Performance Mode  
HP Power Profile set to Maximum Performance  
Thermal Configuration set to Increased Cooling

### 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.xalanbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/spec/cpu2006.1.1/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/Compiler/11.0/080/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/080/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/080/bin/intel64/icc

C++ benchmarks (except as noted below):

icpc

473.astar: /opt/intel/Compiler/11.0/080/bin/intel64/icpc

## Peak Portability Flags

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

401.bzip2: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3

429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
-ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static  
-opt-malloc-options=3 -opt-prefetch

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=routine -auto-ilp32  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

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## Peak Optimization Flags (Continued)

483.xalanbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.10.html>

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090710.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.10.xml>

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090710.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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