



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

SPECint®\_rate2006 = 198

ProLiant ML350 G6  
(2.27 GHz, Intel Xeon E5520)

SPECint\_rate\_base2006 = 183

CPU2006 license: 3

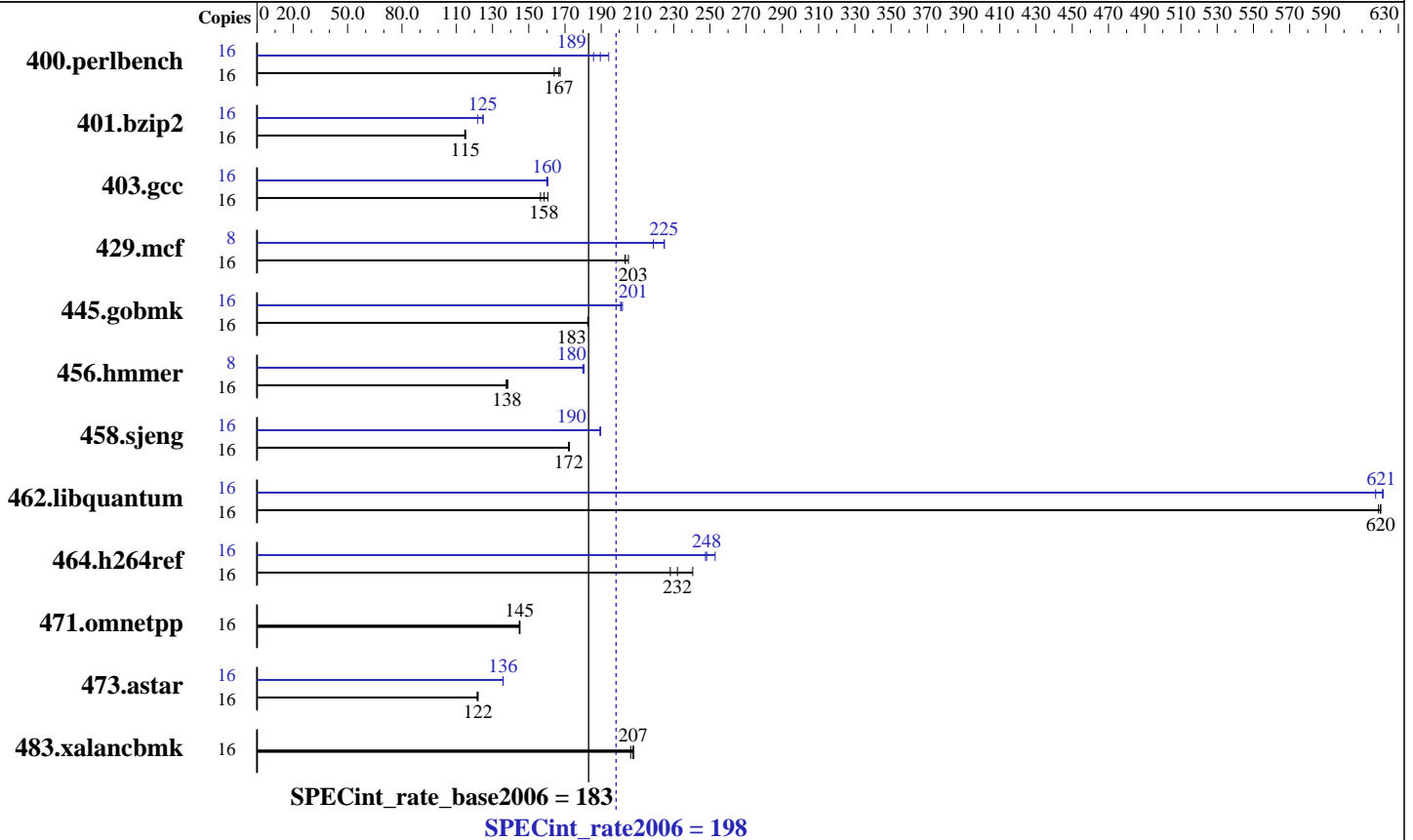
Test date: Aug-2009

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-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: 2267  
 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)  
 Disk Subsystem: 1x146 GB 15 K RPM SAS  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 5.3  
 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	953	164	934	167	<u>938</u>	<u>167</u>	16	842	186	<u>825</u>	<u>189</u>	805	194
401.bzip2	16	1347	115	1341	115	<u>1343</u>	<u>115</u>	16	1267	122	<u>1239</u>	<u>125</u>	1236	125
403.gcc	16	802	161	<u>813</u>	<u>158</u>	823	156	16	805	160	<u>804</u>	<u>160</u>	802	161
429.mcf	16	718	203	712	205	<u>718</u>	<u>203</u>	8	333	219	325	225	<u>325</u>	<u>225</u>
445.gobmk	16	919	183	918	183	<u>919</u>	<u>183</u>	16	<u>836</u>	<u>201</u>	836	201	832	202
456.hammer	16	1078	138	<u>1081</u>	<u>138</u>	1085	138	8	414	181	415	180	<u>414</u>	<u>180</u>
458.sjeng	16	<u>1125</u>	<u>172</u>	1122	172	1126	172	16	1023	189	<u>1021</u>	<u>190</u>	1021	190
462.libquantum	16	534	620	536	619	<u>535</u>	<u>620</u>	16	537	617	<u>534</u>	<u>621</u>	533	622
464.h264ref	16	1472	241	1552	228	<u>1526</u>	<u>232</u>	16	1430	248	1400	253	<u>1426</u>	<u>248</u>
471.omnetpp	16	689	145	691	145	<u>689</u>	<u>145</u>	16	689	145	691	145	<u>689</u>	<u>145</u>
473.astar	16	<u>921</u>	<u>122</u>	921	122	925	121	16	826	136	827	136	<u>827</u>	<u>136</u>
483.xalancbmk	16	535	206	<u>532</u>	<u>207</u>	531	208	16	535	206	<u>532</u>	<u>207</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

## General Notes

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -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.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
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.xalancbmk: 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.20090901.00.html>

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090915.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.20090901.00.xml>

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090915.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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