



# SPEC<sup>®</sup> CINT2006 Result

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## Hewlett-Packard Company

## SPECint<sup>®</sup>\_rate2006 = 214

ProLiant DL360 G6  
(2.53 GHz, Intel Xeon E5540)

## SPECint\_rate\_base2006 = 197

CPU2006 license: 3

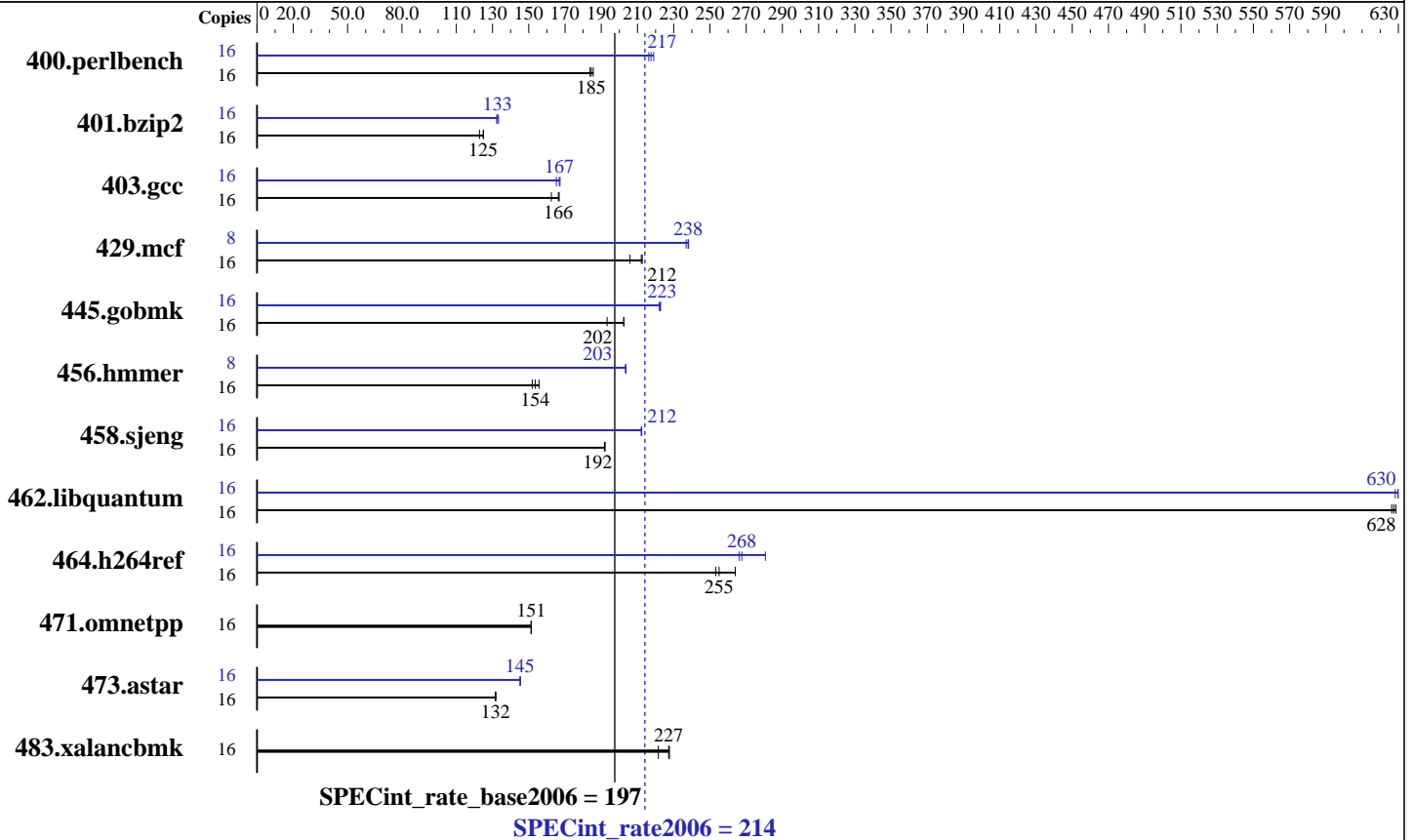
Test date: Jul-2009

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2009

Tested by: Hewlett-Packard Company

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon E5540  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2533  
 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: 2x146 GB 10 K 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	<b>847</b>	<b>185</b>	850	184	842	186	16	<b>719</b>	<b>217</b>	714	219	723	216
401.bzip2	16	1257	123	1235	125	<b>1237</b>	<b>125</b>	16	1159	133	<b>1163</b>	<b>133</b>	1167	132
403.gcc	16	<b>774</b>	<b>166</b>	772	167	793	162	16	770	167	780	165	<b>772</b>	<b>167</b>
429.mcf	16	709	206	686	213	<b>688</b>	<b>212</b>	8	308	237	306	238	<b>307</b>	<b>238</b>
445.gobmk	16	869	193	829	202	<b>829</b>	<b>202</b>	16	<b>754</b>	<b>223</b>	754	223	756	222
456.hammer	16	983	152	<b>972</b>	<b>154</b>	959	156	8	367	203	<b>367</b>	<b>203</b>	367	204
458.sjeng	16	1008	192	1010	192	<b>1008</b>	<b>192</b>	16	913	212	<b>912</b>	<b>212</b>	912	212
462.libquantum	16	<b>528</b>	<b>628</b>	529	626	527	629	16	526	630	<b>526</b>	<b>630</b>	528	628
464.h264ref	16	1398	253	1341	264	<b>1388</b>	<b>255</b>	16	<b>1323</b>	<b>268</b>	1262	281	1330	266
471.omnetpp	16	660	151	<b>661</b>	<b>151</b>	661	151	16	660	151	<b>661</b>	<b>151</b>	661	151
473.astar	16	854	132	<b>853</b>	<b>132</b>	852	132	16	774	145	<b>774</b>	<b>145</b>	772	145
483.xalancbmk	16	498	222	<b>486</b>	<b>227</b>	485	228	16	498	222	<b>486</b>	<b>227</b>	485	228

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

### Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

### Platform Notes

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

### 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-alloc  
-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.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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