



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

SPECint®\_rate2006 = 205

ProLiant DL360e Gen8  
(2.20 GHz, Intel Xeon E5-2407)

SPECint\_rate\_base2006 = 197

CPU2006 license: 3

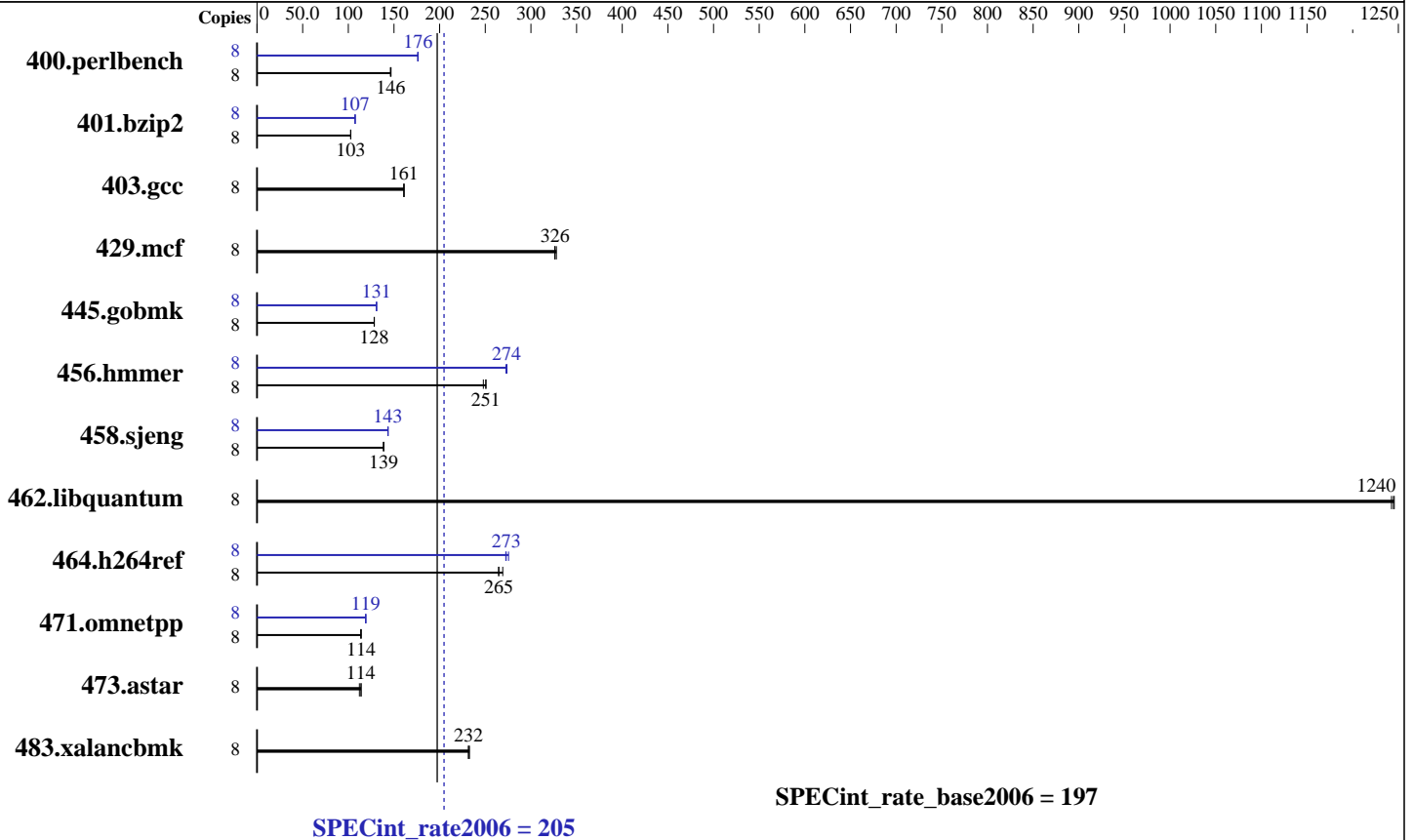
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Nov-2012

Hardware Availability: Jun-2012

Software Availability: Jun-2012



### Hardware

CPU Name: Intel Xeon E5-2407  
 CPU Characteristics: 2200  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 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: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6 x 4 GB 2Rx4 PC3L-10600R-9, ECC, running at 1066 MHz and CL7)  
 Disk Subsystem: 3 x 600 GB SATA, 10 K SAS, RAID 5  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.3, (Santiago)  
 Kernel 2.6.32-279.el6.x86\_64  
 Compiler: C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01  
 HP Array Configuration Utility, CLI version



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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	8	535	146	<u>534</u>	<u>146</u>	532	147	8	443	176	444	176	<u>443</u>	<u>176</u>
401.bzip2	8	753	103	751	103	<u>752</u>	<u>103</u>	8	719	107	<u>719</u>	<u>107</u>	718	108
403.gcc	8	401	161	400	161	<u>400</u>	<u>161</u>	8	401	161	400	161	<u>400</u>	<u>161</u>
429.mcf	8	<u>223</u>	<u>326</u>	224	326	223	328	8	<u>223</u>	<u>326</u>	224	326	223	328
445.gobmk	8	653	129	<u>654</u>	<u>128</u>	654	128	8	<u>641</u>	<u>131</u>	641	131	641	131
456.hammer	8	301	248	298	251	<u>298</u>	<u>251</u>	8	273	274	<u>273</u>	<u>274</u>	274	273
458.sjeng	8	698	139	<u>698</u>	<u>139</u>	699	139	8	<u>675</u>	<u>143</u>	675	143	674	144
462.libquantum	8	133	1250	133	1240	<u>133</u>	<u>1240</u>	8	133	1250	133	1240	<u>133</u>	<u>1240</u>
464.h264ref	8	669	265	<u>668</u>	<u>265</u>	658	269	8	650	272	643	275	<u>649</u>	<u>273</u>
471.omnetpp	8	<u>439</u>	<u>114</u>	438	114	440	114	8	420	119	419	119	<u>420</u>	<u>119</u>
473.astar	8	501	112	<u>493</u>	<u>114</u>	493	114	8	501	112	<u>493</u>	<u>114</u>	493	114
483.xalancbmk	8	237	233	238	232	<u>238</u>	<u>232</u>	8	237	233	238	232	<u>238</u>	<u>232</u>

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/transparent\_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1 > /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --localalloc runspec <etc>  
Drive Write Cache set to Enabled in HP Array Configuration Utility, CLI version  
Accelerator Ratio for Reads/Writes set to = 100% Read / 0% Write in HP Array Configuration Utility, CLI version

## Platform Notes

BIOS Configuration:  
HP Power Regulator set to HP Static High Performance Mode  
HP Power Profile set to Custom  
Energy/Performance Bias set to Maximum Performance  
Thermal Configuration set to Maximum Cooling  
Collaborative Power Control set to Disabled

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## Platform Notes (Continued)

Processor Power and Utilization Monitoring set to Disabled  
Memory Power Savings Mode set to Performance

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact,1,0"  
LD\_LIBRARY\_PATH = "/cpu2006/libs2/32:/cpu2006/libs2/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB  
memory using RHEL5.5

## Base Compiler Invocation

C benchmarks:  
icc -m32

C++ benchmarks:  
icpc -m32

## 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 -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/spec/libs2/32 -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LINUX

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) -prof-use(pass 2)  
-auto-ilp32

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

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3

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

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

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## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

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

C++ benchmarks:

471.omnetpp: -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=block -Wl,-z,muldefs  
-L/spec/libs2/32 -lsmartheap

473.astar: basepeak = yes

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-ic12.1-official-linux64.20120425.html>  
<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>  
<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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