



# SPEC<sup>®</sup> CINT2006 Result

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## Hewlett-Packard Company

### SPECint<sup>®</sup>\_rate2006 = 114

ProLiant BL460c  
(2.33 GHz, Intel Xeon E5410)

### SPECint\_rate\_base2006 = 93.8

CPU2006 license: 3

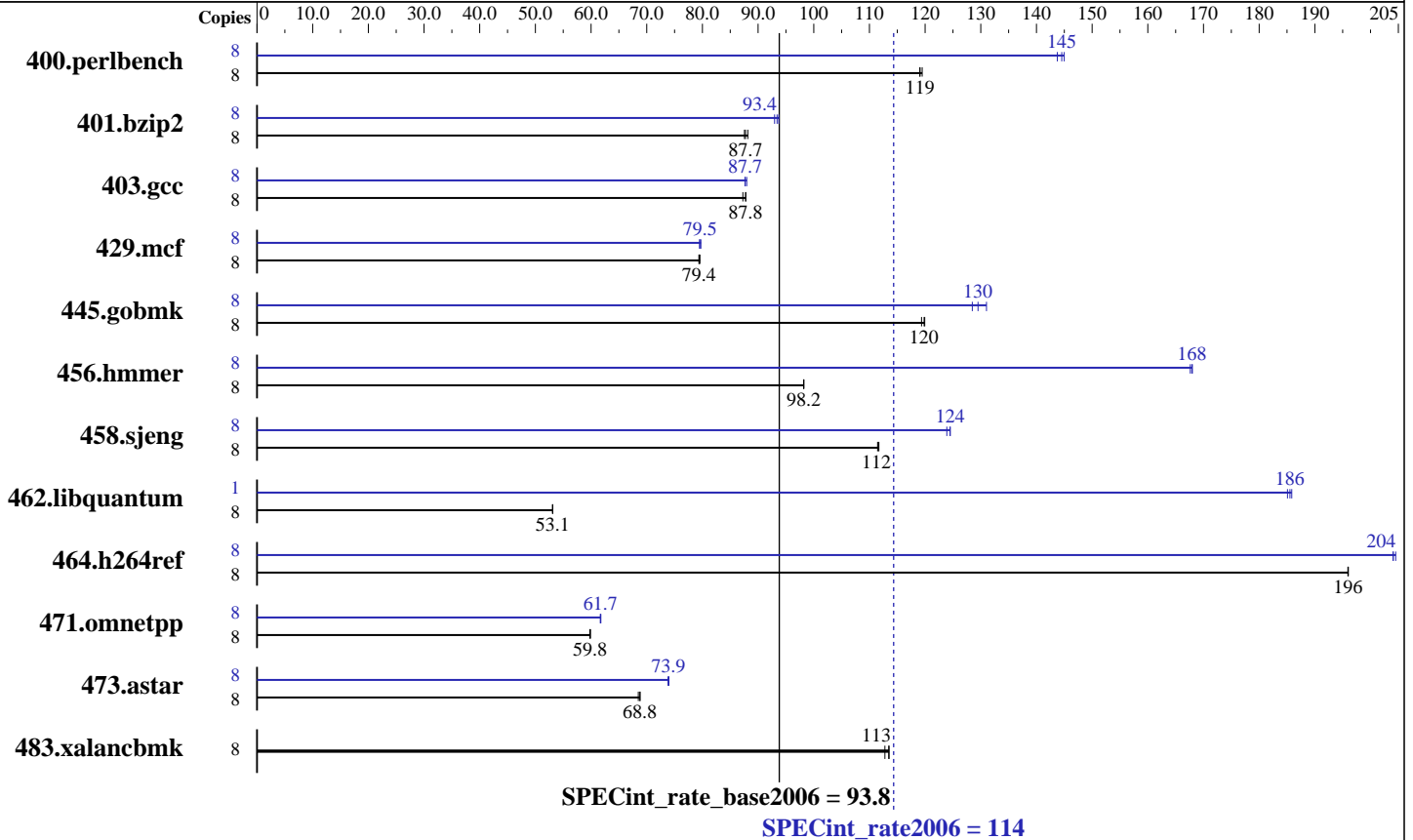
Test date: Mar-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Nov-2007

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5410  
 CPU Characteristics: 2.33 GHz, 2x6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 2333  
 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (8x2 GB PC2-5300F CL5)  
 Disk Subsystem: 1x72 GB 15 K SAS  
 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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	<b>656</b>	<b>119</b>	654	119	656	119	8	539	145	544	144	<b>541</b>	<b>145</b>
401.bzip2	8	<b>880</b>	<b>87.7</b>	882	87.6	876	88.2	8	830	93.0	824	93.7	<b>826</b>	<b>93.4</b>
403.gcc	8	738	87.3	<b>734</b>	<b>87.8</b>	734	87.8	8	<b>734</b>	<b>87.7</b>	732	88.0	735	87.6
429.mcf	8	<b>919</b>	<b>79.4</b>	917	79.6	919	79.4	8	918	79.5	<b>917</b>	<b>79.5</b>	915	79.7
445.gobmk	8	703	119	<b>700</b>	<b>120</b>	700	120	8	640	131	653	128	<b>648</b>	<b>130</b>
456.hammer	8	<b>760</b>	<b>98.2</b>	760	98.2	760	98.2	8	444	168	<b>445</b>	<b>168</b>	445	168
458.sjeng	8	<b>867</b>	<b>112</b>	868	111	867	112	8	778	124	<b>778</b>	<b>124</b>	781	124
462.libquantum	8	3121	53.1	3122	53.1	<b>3121</b>	<b>53.1</b>	1	111	186	<b>112</b>	<b>186</b>	112	185
464.h264ref	8	904	196	903	196	<b>903</b>	<b>196</b>	8	866	205	<b>868</b>	<b>204</b>	868	204
471.omnetpp	8	835	59.9	<b>836</b>	<b>59.8</b>	837	59.8	8	<b>810</b>	<b>61.7</b>	810	61.8	811	61.7
473.astar	8	820	68.5	<b>817</b>	<b>68.8</b>	816	68.8	8	759	74.0	761	73.8	<b>760</b>	<b>73.9</b>
483.xalancbmk	8	489	113	486	114	<b>487</b>	<b>113</b>	8	489	113	486	114	<b>487</b>	<b>113</b>

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 Static High Performance Mode  
Adjacent Sector Prefetch Disabled  
Hardware Prefetcher Enabled

## 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:  
-fast -inline-calloc -opt-malloc-options=3

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.hmmmer: /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.hmmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC\_CPU\_LINUX

## 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

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -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:

Continued on next page



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## Peak Other Flags (Continued)

403.gcc: -Dalloca=\_alloca

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.20090713.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.20090713.xml>

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

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