



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

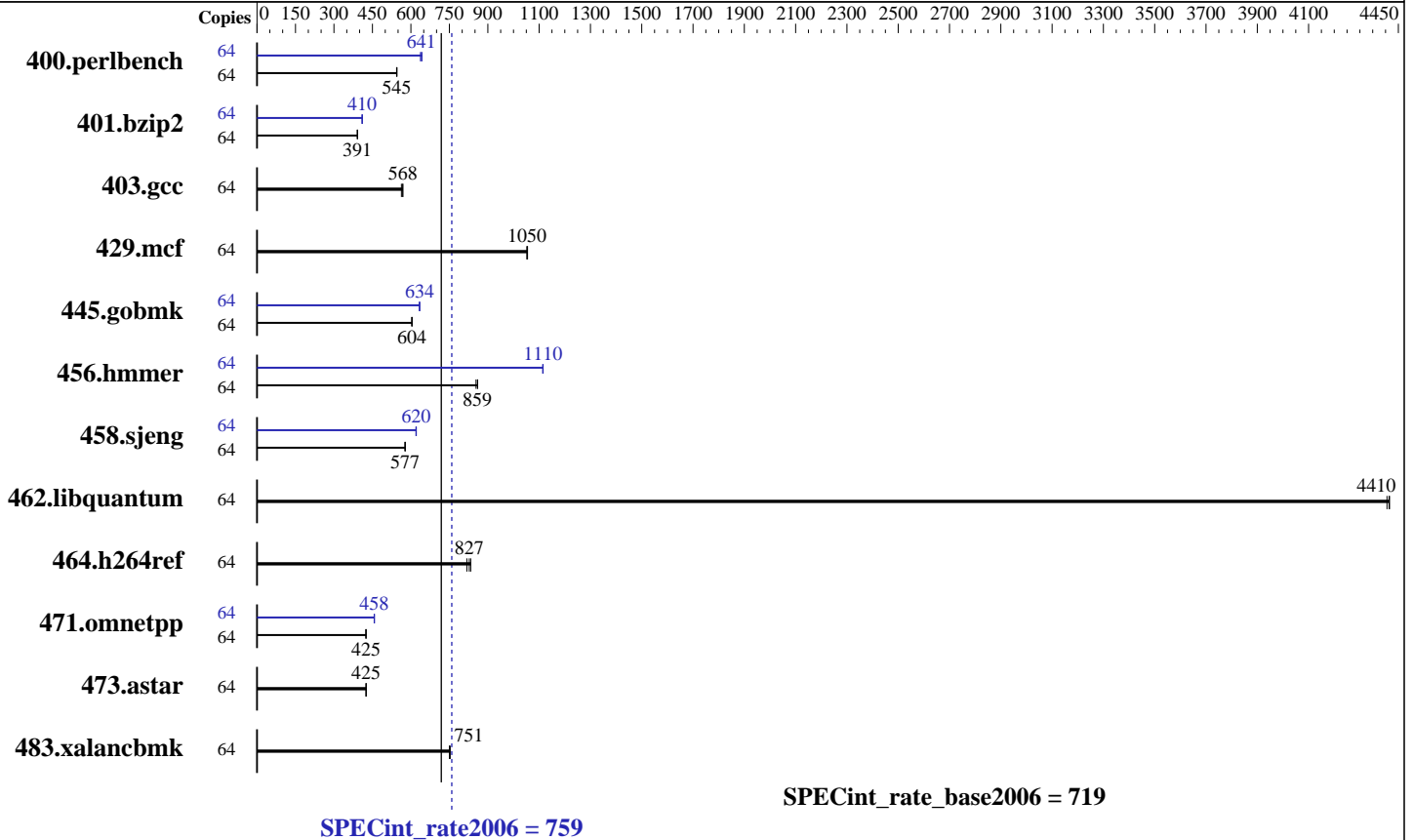
SPECint®\_rate2006 = 759

ProLiant DL580 G7  
(2.00 GHz, Intel Xeon E7-4820)

SPECint\_rate\_base2006 = 719

CPU2006 license: 3  
Test sponsor: Hewlett-Packard Company  
Tested by: Hewlett-Packard Company

Test date: Sep-2011  
Hardware Availability: Apr-2011  
Software Availability: Aug-2011



### Hardware

CPU Name: Intel Xeon E7-4820  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.27 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4 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: 18 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (64 x 4 GB 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 1 x 146 GB 10 K SAS  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.1, Kernel 2.6.32-131.0.15.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel Compiler XE Build 20110803  
 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 V9.01



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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	64	1146	545	1149	544	<u>1147</u>	<u>545</u>	64	972	643	981	637	<u>976</u>	<u>641</u>		
401.bzip2	64	1575	392	<u>1579</u>	<u>391</u>	1579	391	64	1506	410	<u>1506</u>	<u>410</u>	1505	410		
403.gcc	64	915	563	906	569	<u>907</u>	<u>568</u>	64	915	563	906	569	<u>907</u>	<u>568</u>		
429.mcf	64	<u>554</u>	<u>1050</u>	555	1050	553	1050	64	<u>554</u>	<u>1050</u>	555	1050	553	1050		
445.gobmk	64	<u>1112</u>	<u>604</u>	1112	604	1110	605	64	1061	633	<u>1059</u>	<u>634</u>	1059	634		
456.hammer	64	694	860	699	854	<u>695</u>	<u>859</u>	64	536	1110	535	1120	<u>536</u>	<u>1110</u>		
458.sjeng	64	1339	578	<u>1341</u>	<u>577</u>	1342	577	64	1247	621	<u>1248</u>	<u>620</u>	1249	620		
462.libquantum	64	300	4420	301	4410	<u>300</u>	<u>4410</u>	64	300	4420	301	4410	<u>300</u>	<u>4410</u>		
464.h264ref	64	<u>1712</u>	<u>827</u>	1700	833	1731	818	64	<u>1712</u>	<u>827</u>	1700	833	1731	818		
471.omnetpp	64	941	425	<u>941</u>	<u>425</u>	942	425	64	<u>874</u>	<u>458</u>	876	457	874	458		
473.astar	64	1057	425	<u>1056</u>	<u>425</u>	1055	426	64	1057	425	<u>1056</u>	<u>425</u>	1055	426		
483.xalancbmk	64	586	753	<u>588</u>	<u>751</u>	589	750	64	586	753	<u>588</u>	<u>751</u>	589	750		

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

Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

## Platform Notes

BIOS configuration:  
HP Power Profile set to Maximum Performance  
Thermal Configuration set to Increased Cooling

## General Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Base Compiler Invocation

C benchmarks:  
icc -m32

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## Base Compiler Invocation (Continued)

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/smartheap -lsmartheap

## Base Other Flags

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

## 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



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## 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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes



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## 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/HP-Intel-Linux-Settings-flags.20110316.html>  
<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.html>

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

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.xml>  
<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.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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