



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

**SPECint®\_rate2006 = 1390**

ProLiant DL360 Gen9  
(2.30 GHz, Intel Xeon E5-2699 v3)

**SPECint\_rate\_base2006 = 1350**

CPU2006 license: 3

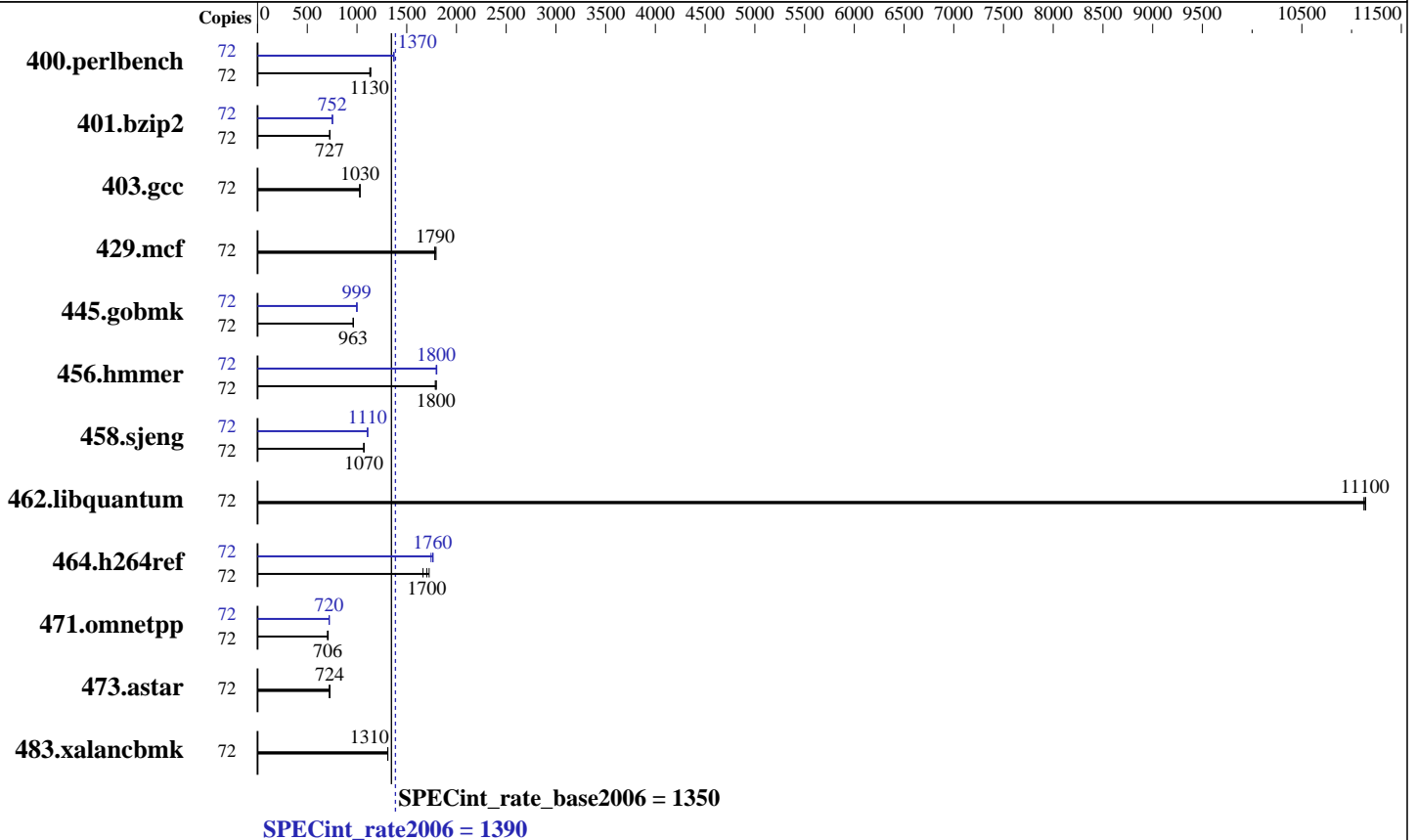
Test date: Jul-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Jun-2014



### Hardware

CPU Name: Intel Xeon E5-2699 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 36 cores, 2 chips, 18 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 45 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)  
 Kernel 3.10.0-123.el7.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECint\_rate2006 = 1390

ProLiant DL360 Gen9  
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint\_rate\_base2006 = 1350

CPU2006 license: 3

Test date: Jul-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Jun-2014

## Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	72	622	1130	<b><u>622</u></b>	<b><u>1130</u></b>	618	1140	72	513	1370	<b><u>513</u></b>	<b><u>1370</u></b>	514	1370
401.bzip2	72	<b><u>956</u></b>	<b><u>727</u></b>	958	725	956	727	72	924	752	923	753	<b><u>923</u></b>	<b><u>752</u></b>
403.gcc	72	564	1030	<b><u>563</u></b>	<b><u>1030</u></b>	562	1030	72	564	1030	<b><u>563</u></b>	<b><u>1030</u></b>	562	1030
429.mcf	72	366	1790	<b><u>368</u></b>	<b><u>1790</u></b>	369	1780	72	366	1790	<b><u>368</u></b>	<b><u>1790</u></b>	369	1780
445.gobmk	72	783	965	<b><u>784</u></b>	<b><u>963</u></b>	786	961	72	757	997	756	999	<b><u>756</u></b>	<b><u>999</u></b>
456.hammer	72	<b><u>374</u></b>	<b><u>1800</u></b>	374	1800	376	1790	72	<b><u>374</u></b>	<b><u>1800</u></b>	373	1800	374	1800
458.sjeng	72	<b><u>815</u></b>	<b><u>1070</u></b>	813	1070	816	1070	72	787	1110	<b><u>787</u></b>	<b><u>1110</u></b>	788	1110
462.libquantum	72	134	11100	134	11100	<b><u>134</u></b>	<b><u>11100</u></b>	72	134	11100	134	11100	<b><u>134</u></b>	<b><u>11100</u></b>
464.h264ref	72	<b><u>937</u></b>	<b><u>1700</u></b>	958	1660	924	1720	72	913	1740	<b><u>904</u></b>	<b><u>1760</u></b>	903	1760
471.omnetpp	72	633	711	640	704	<b><u>638</u></b>	<b><u>706</u></b>	72	626	719	<b><u>625</u></b>	<b><u>720</u></b>	623	722
473.astar	72	<b><u>698</u></b>	<b><u>724</u></b>	695	727	701	721	72	<b><u>698</u></b>	<b><u>724</u></b>	695	727	701	721
483.xalancbmk	72	379	1310	380	1310	<b><u>380</u></b>	<b><u>1310</u></b>	72	379	1310	380	1310	<b><u>380</u></b>	<b><u>1310</u></b>

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 --interleave=all runspec <etc>

## Platform Notes

BIOS Configuration:  
HP Power Profile set to Maximum Performance  
Thermal Configuration set to Maximum Cooling  
Collaborative Power Control set to Disabled  
QPI Snoop Configuration set to Cluster on Die  
Processor Power and Utilization Monitoring set to Disabled  
Memory Patrol Scrubbing set to Disabled  
Memory Refresh Rate set to 1x Refresh



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint\_rate2006 = 1390**

ProLiant DL360 Gen9  
(2.30 GHz, Intel Xeon E5-2699 v3)

**SPECint\_rate\_base2006 = 1350**

**CPU2006 license:** 3

**Test date:** Jul-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Sep-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Jun-2014

## General Notes

Environment variables set by runspec before the start of the run:

LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB  
memory using RedHat EL 6.4

## 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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint\_rate2006 = 1390**

ProLiant DL360 Gen9  
(2.30 GHz, Intel Xeon E5-2699 v3)

**SPECint\_rate\_base2006 = 1350**

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

**Test date:** Jul-2014  
**Hardware Availability:** Sep-2014  
**Software Availability:** Jun-2014

## Peak Compiler Invocation (Continued)

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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`  
`-ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`  
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`  
`-unroll14 -auto-ilp32`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint\_rate2006 = 1390**

ProLiant DL360 Gen9  
(2.30 GHz, Intel Xeon E5-2699 v3)

**SPECint\_rate\_base2006 = 1350**

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

**Test date:** Jul-2014  
**Hardware Availability:** Sep-2014  
**Software Availability:** Jun-2014

## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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/sh -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-ic14.0-official-linux64.20140128.html>  
<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>  
<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revA.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Wed Sep 24 16:19:48 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 24 September 2014.