



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

**SPECint®\_rate2006 = 1200**

ProLiant BL660c Gen8  
(2.60 GHz, Intel Xeon E5-4650L)

**SPECint\_rate\_base2006 = 1150**

CPU2006 license: 3

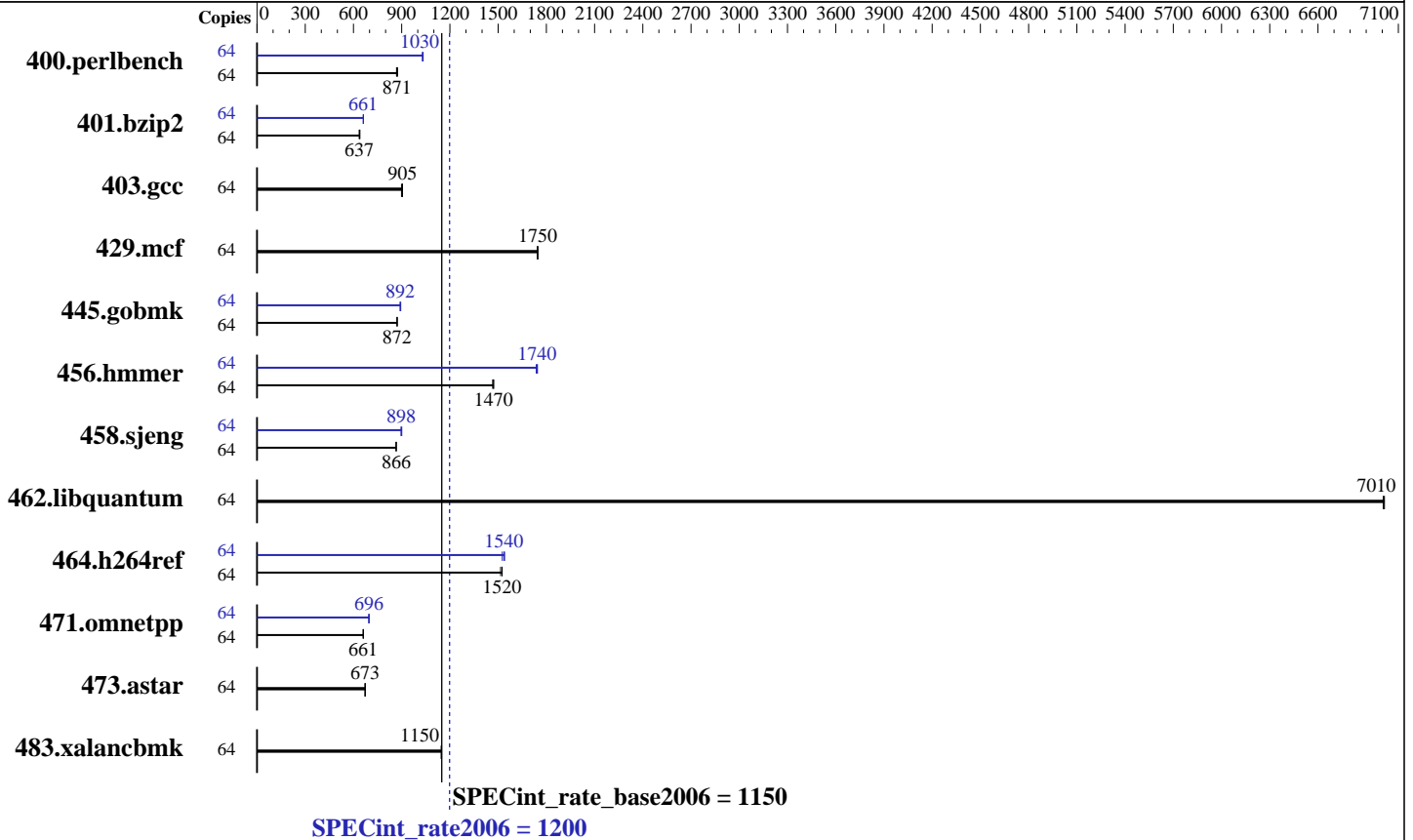
Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012



### Hardware

CPU Name: Intel Xeon E5-4650L  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 2 x 300 GB 10 K SAS, RAID 1  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.3, (Santiago)  
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 9.0-16.0



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECint\_rate2006 = 1200

ProLiant BL660c Gen8  
(2.60 GHz, Intel Xeon E5-4650L)

SPECint\_rate\_base2006 = 1150

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	720	868	<b><u>718</u></b>	<b><u>871</u></b>	715	874	64	608	1030	605	1030	<b><u>606</u></b>	<b><u>1030</u></b>
401.bzip2	64	970	636	965	640	<b><u>970</u></b>	<b><u>637</u></b>	64	<b><u>934</u></b>	<b><u>661</u></b>	933	662	934	661
403.gcc	64	573	899	569	905	<b><u>569</u></b>	<b><u>905</u></b>	64	573	899	569	905	<b><u>569</u></b>	<b><u>905</u></b>
429.mcf	64	335	1740	334	1750	<b><u>334</u></b>	<b><u>1750</u></b>	64	335	1740	334	1750	<b><u>334</u></b>	<b><u>1750</u></b>
445.gobmk	64	771	871	<b><u>770</u></b>	<b><u>872</u></b>	770	872	64	751	894	<b><u>753</u></b>	<b><u>892</u></b>	754	890
456.hammer	64	406	1470	<b><u>406</u></b>	<b><u>1470</u></b>	407	1470	64	342	1740	<b><u>342</u></b>	<b><u>1740</u></b>	344	1740
458.sjeng	64	894	866	895	865	<b><u>894</u></b>	<b><u>866</u></b>	64	<b><u>863</u></b>	<b><u>898</u></b>	864	896	860	901
462.libquantum	64	189	7010	<b><u>189</u></b>	<b><u>7010</u></b>	189	7010	64	189	7010	<b><u>189</u></b>	<b><u>7010</u></b>	189	7010
464.h264ref	64	<b><u>929</u></b>	<b><u>1520</u></b>	935	1520	929	1520	64	<b><u>922</u></b>	<b><u>1540</u></b>	928	1530	920	1540
471.omnetpp	64	<b><u>605</u></b>	<b><u>661</u></b>	605	661	605	661	64	575	696	574	697	<b><u>575</u></b>	<b><u>696</u></b>
473.astar	64	669	672	667	674	<b><u>667</u></b>	<b><u>673</u></b>	64	669	672	667	674	<b><u>667</u></b>	<b><u>673</u></b>
483.xalancbmk	64	<b><u>385</u></b>	<b><u>1150</u></b>	385	1150	385	1150	64	<b><u>385</u></b>	<b><u>1150</u></b>	385	1150	385	1150

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>  
Accelerator Ratio for Reads/Writes set to = 100% Read / 0% Write  
in HP Array Configuration Utility, CLI version 9.0-16.0

## Platform Notes

BIOS Configuration:  
HP Power Profile set to Maximum Performance  
Memory Power Savings Mode set to Maximum Performance  
Thermal Configuration set to Maximum Cooling  
Sysinfo program /cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on BL660c-GJ2 Sat Nov 3 22:04:10 2012

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECint\_rate2006 = 1200

ProLiant BL660c Gen8  
(2.60 GHz, Intel Xeon E5-4650L)

SPECint\_rate\_base2006 = 1150

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

### Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
model name      : Intel(R) Xeon(R) CPU E5-4650L 0 @ 2.60GHz
 4 "physical id"s (chips)
64 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores    : 8
  siblings     : 16
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
  physical 2: cores 0 1 2 3 4 5 6 7
  physical 3: cores 0 1 2 3 4 5 6 7
cache size     : 20480 KB

```

```

From /proc/meminfo
MemTotal:      264485280 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.3 (Santiago)

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux BL660c-GJ2 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36 EDT 2012
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Nov 3 21:57

```

SPEC is set to: /cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda3        ext4      273G  14G  246G   6% /

```

```

Additional information from dmidecode:
BIOS HP I32 08/20/2012
Memory:
32x HP Not Specified 8 GB 1600 MHz 2 rank

```

(End of data from sysinfo program)



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint\_rate2006 = 1200**

ProLiant BL660c Gen8  
(2.60 GHz, Intel Xeon E5-4650L)

**SPECint\_rate\_base2006 = 1150**

**CPU2006 license:** 3

**Test date:** Nov-2012

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Oct-2012

**Tested by:** Hewlett-Packard Company

**Software Availability:** Jun-2012

## 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 2x Xeon E5-2677 CPU + 256GB  
memory using SLES11 SP2, RC3

## 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

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint\_rate2006 = 1200**

ProLiant BL660c Gen8  
(2.60 GHz, Intel Xeon E5-4650L)

**SPECint\_rate\_base2006 = 1150**

**CPU2006 license:** 3

**Test date:** Nov-2012

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Oct-2012

**Tested by:** Hewlett-Packard Company

**Software Availability:** Jun-2012

## 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: `-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`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECint\_rate2006 = 1200**

ProLiant BL660c Gen8  
(2.60 GHz, Intel Xeon E5-4650L)

**SPECint\_rate\_base2006 = 1150**

**CPU2006 license:** 3

**Test date:** Nov-2012

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Oct-2012

**Tested by:** Hewlett-Packard Company

**Software Availability:** Jun-2012

## 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 -lsmarheap

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>

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 Thu Jul 24 14:07:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 20 November 2012.