



# SPEC® CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant BL460c Gen10  
(1.70 GHz, Intel Xeon Bronze 3104)

**SPECint®2006 = Not Run**

**SPECint\_base2006 = 23.0**

**CPU2006 license:** 3

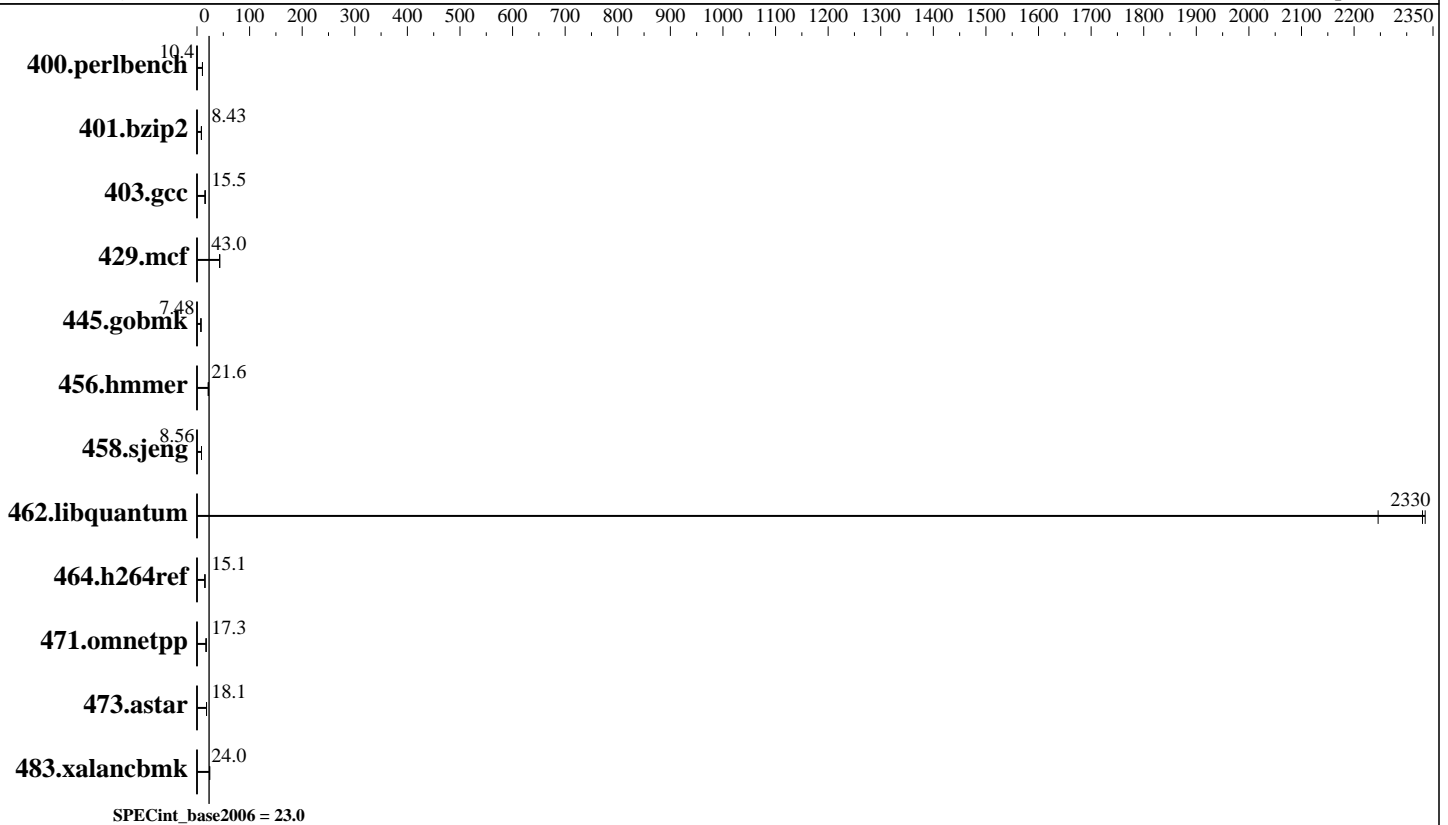
**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Dec-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Sep-2017



## Hardware

CPU Name: Intel Xeon Bronze 3104  
 CPU Characteristics:  
 CPU MHz: 1700  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip  
 CPU(s) orderable: 1, 2 chip(s)  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: 8.25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R, running at 2133)  
 Disk Subsystem: 1 x 480 GB SATA SSD, RAID 0  
 Other Hardware: None

## Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
 Kernel 3.10.0-693.el7.x86\_64  
 Compiler: C/C++: Version 17.0.1.132 of Intel C/C++ Compiler for Linux;  
 Fortran: Version 17.0.1.132 of Intel Fortran Compiler for Linux  
 Auto Parallel: Yes  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other Software: Microquill SmartHeap V10.2



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant BL460c Gen10

(1.70 GHz, Intel Xeon Bronze 3104)

SPECint2006 =

Not Run

SPECint\_base2006 =

23.0

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	939	10.4	<b><u>939</u></b>	<b><u>10.4</u></b>	940	10.4						
401.bzip2	1145	8.43	<b><u>1145</u></b>	<b><u>8.43</u></b>	1145	8.43						
403.gcc	519	15.5	<b><u>519</u></b>	<b><u>15.5</u></b>	521	15.5						
429.mcf	212	42.9	<b><u>212</u></b>	<b><u>43.0</u></b>	211	43.2						
445.gobmk	<b><u>1402</u></b>	<b><u>7.48</u></b>	1402	7.48	1402	7.48						
456.hammer	<b><u>433</u></b>	<b><u>21.6</u></b>	432	21.6	433	21.6						
458.sjeng	1414	8.56	<b><u>1414</u></b>	<b><u>8.56</u></b>	1414	8.56						
462.libquantum	8.87	2340	<b><u>8.89</u></b>	<b><u>2330</u></b>	9.23	2250						
464.h264ref	1468	15.1	<b><u>1469</u></b>	<b><u>15.1</u></b>	1471	15.0						
471.omnetpp	359	17.4	361	17.3	<b><u>360</u></b>	<b><u>17.3</u></b>						
473.astar	<b><u>388</u></b>	<b><u>18.1</u></b>	389	18.1	387	18.2						
483.xalancbmk	288	24.0	287	24.0	<b><u>287</u></b>	<b><u>24.0</u></b>						

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

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages enabled by default  
Filesystem page cache cleared with:  
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run  
irqbalance disabled with "systemctl stop irqbalance"  
tuned profile set with "tuned-adm profile throughput-performance"

## Platform Notes

BIOS Configuration:  
Thermal Configuration set to Maximum Cooling  
LLC Prefetch set to Enabled  
LLC Dead Line Allocation set to Disabled  
Memory Patrol Scrubbing set to Disabled  
Workload Profile set to General Peak Frequency Compute  
Energy/Performance Bias set to Maximum Performance  
Workload Profile set to Custom  
NUMA Group Size Optimization set to Flat  
Uncore Frequency Scaling set to Auto  
Sysinfo program /root/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on localhost.localdomain Thu Dec 14 10:07:20 2017

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>

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant BL460c Gen10  
(1.70 GHz, Intel Xeon Bronze 3104)

SPECint2006 = Not Run

SPECint\_base2006 = 23.0

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

## Platform Notes (Continued)

From /proc/cpuinfo

model name : Intel(R) Xeon(R) Bronze 3104 CPU @ 1.70GHz

2 "physical id"s (chips)

12 "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 : 6

siblings : 6

physical 0: cores 0 1 2 3 4 5

physical 1: cores 0 1 2 3 4 5

cache size : 8448 KB

From /proc/meminfo

MemTotal: 197575968 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

From /etc/\*release\* /etc/\*version\*

os-release:

NAME="Red Hat Enterprise Linux Server"

VERSION="7.3 (Maipo)"

ID="rhel"

ID\_LIKE="fedora"

VERSION\_ID="7.3"

PRETTY\_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"

ANSI\_COLOR="0;31"

CPE\_NAME="cpe:/o:redhat:enterprise\_linux:7.3:GA:server"

redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

system-release-cpe: cpe:/o:redhat:enterprise\_linux:7.3:ga:server

uname -a:

Linux localhost.localdomain 3.10.0-514.el7.x86\_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016 x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Dec 14 09:58

SPEC is set to: /root/cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda4	xfs	442G	30G	413G	7%	/

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS HPE I41 09/29/2017

Memory:

4x UNKNOWN NOT AVAILABLE

12x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2133 MHz

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant BL460c Gen10  
(1.70 GHz, Intel Xeon Bronze 3104)

SPECint2006 = Not Run

SPECint\_base2006 = 23.0

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

## Platform Notes (Continued)

(End of data from sysinfo program)

## General Notes

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

KMP\_AFFINITY = "granularity=fine,scatter"

LD\_LIBRARY\_PATH = "/root/cpu2006/lib/ia32:/root/cpu2006/lib/intel64:/root/cpu2006/sh10.2"

OMP\_NUM\_THREADS = "12"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, <http://www.spec.org/osg/policy.htm>.

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant BL460c Gen10

(1.70 GHz, Intel Xeon Bronze 3104)

SPECint2006 =

Not Run

SPECint\_base2006 =

23.0

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

## Base Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

```

## Base Optimization Flags

C benchmarks:

```

-xCORE-AVX512 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-auto-p32

```

C++ benchmarks:

```

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64

```

## Base 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-ic17.0-official-linux64-revF.html>

<http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml>

<http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revH.xml>



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant BL460c Gen10**

(1.70 GHz, Intel Xeon Bronze 3104)

**SPECint2006 =**

**Not Run**

**SPECint\_base2006 =**

**23.0**

**CPU2006 license:** 3

**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Dec-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Sep-2017

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 Jun 14 11:29:29 2018 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 13 June 2018.