



# SPEC® CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL580 Gen10  
(2.40 GHz, Intel Xeon Gold 6148)

**SPECint®\_rate2006 = Not Run**

**SPECint\_rate\_base2006 = 3720**

CPU2006 license: 3

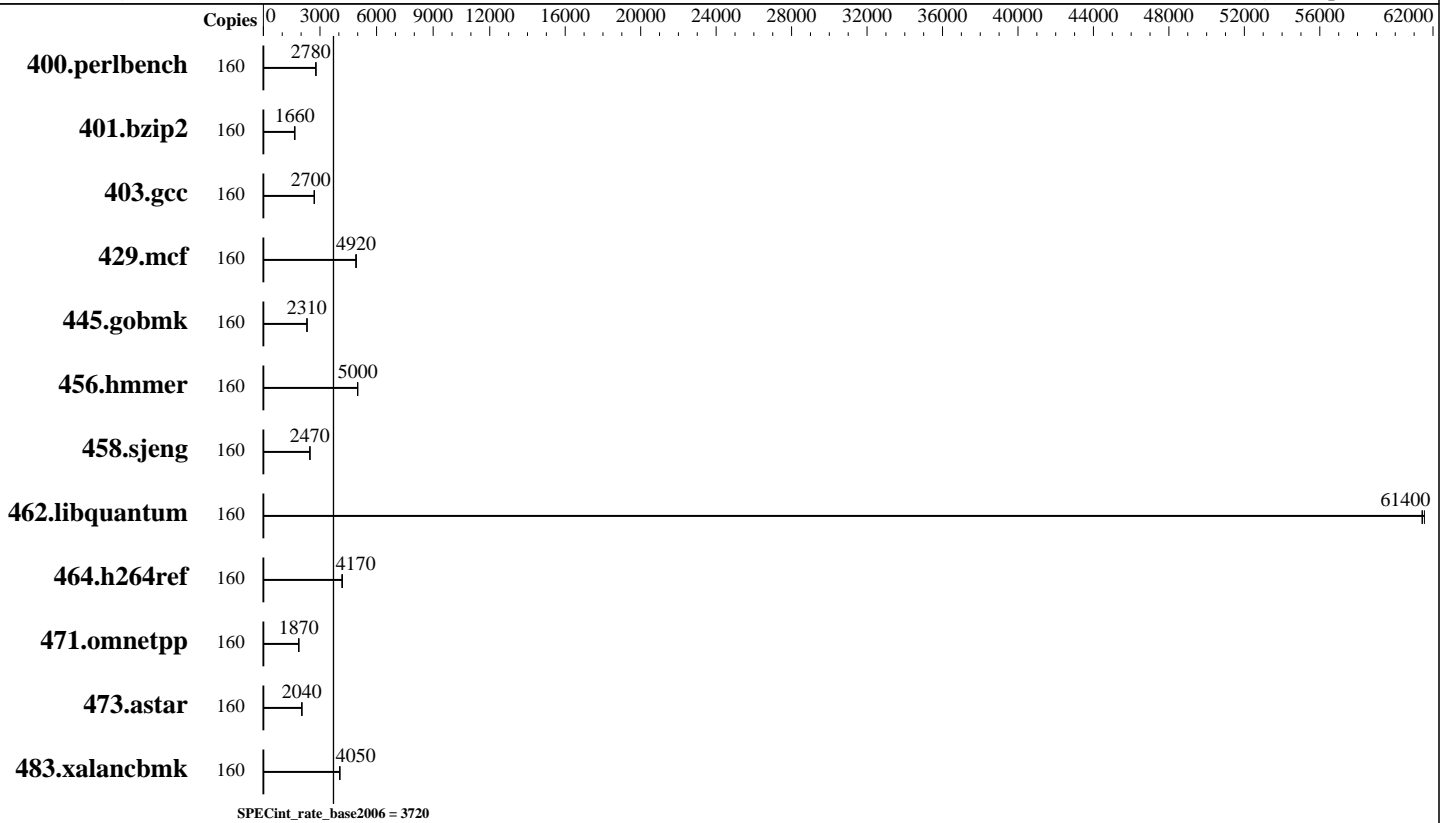
Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017



## Hardware

CPU Name: Intel Xeon Gold 6148  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 80 cores, 4 chips, 20 cores/chip, 2 threads/core  
 CPU(s) orderable: 1, 2, 4 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: 27.5 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 768 GB (48 x 16 GB 2Rx8 PC4-2666V-R)  
 Disk Subsystem: 1 x 600 GB SAS 15 K, RAID 0  
 Other Hardware: None

## Software

Operating System: SUSE Linux Enterprise Server 12 (x86\_64) SP3  
 Kernel 4.4.73-5-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-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 DL580 Gen10

(2.40 GHz, Intel Xeon Gold 6148)

SPECint\_rate2006 = Not Run

SPECint\_rate\_base2006 = 3720

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017

## Results Table

| Benchmark      | Base   |            |             |             |              |            |             | Peak   |         |       |         |       |         |       |
|----------------|--------|------------|-------------|-------------|--------------|------------|-------------|--------|---------|-------|---------|-------|---------|-------|
|                | Copies | Seconds    | Ratio       | Seconds     | Ratio        | Seconds    | Ratio       | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench  | 160    | <b>562</b> | <b>2780</b> | 560         | 2790         | 563        | 2780        |        |         |       |         |       |         |       |
| 401.bzip2      | 160    | 937        | 1650        | 922         | 1680         | <b>930</b> | <b>1660</b> |        |         |       |         |       |         |       |
| 403.gcc        | 160    | 476        | 2710        | 479         | 2690         | <b>477</b> | <b>2700</b> |        |         |       |         |       |         |       |
| 429.mcf        | 160    | 298        | 4900        | <b>297</b>  | <b>4920</b>  | 296        | 4930        |        |         |       |         |       |         |       |
| 445.gobmk      | 160    | 727        | 2310        | 725         | 2320         | <b>727</b> | <b>2310</b> |        |         |       |         |       |         |       |
| 456.hammer     | 160    | <b>299</b> | <b>5000</b> | 299         | 5000         | 299        | 5000        |        |         |       |         |       |         |       |
| 458.sjeng      | 160    | 784        | 2470        | <b>785</b>  | <b>2470</b>  | 786        | 2460        |        |         |       |         |       |         |       |
| 462.libquantum | 160    | 53.9       | 61500       | <b>54.0</b> | <b>61400</b> | 54.0       | 61400       |        |         |       |         |       |         |       |
| 464.h264ref    | 160    | 849        | 4170        | 845         | 4190         | <b>849</b> | <b>4170</b> |        |         |       |         |       |         |       |
| 471.omnetpp    | 160    | <b>533</b> | <b>1870</b> | 532         | 1880         | 533        | 1870        |        |         |       |         |       |         |       |
| 473.astar      | 160    | 550        | 2040        | <b>551</b>  | <b>2040</b>  | 551        | 2040        |        |         |       |         |       |         |       |
| 483.xalancbmk  | 160    | 272        | 4060        | <b>272</b>  | <b>4050</b>  | 273        | 4040        |        |         |       |         |       |         |       |

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 by default
Filesystem page cache cleared with:
  shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
irqbalance disabled with "systemctl stop irqbalance"
tuned profile set with "tuned-adm profile throughput-performance"
VM Dirty ratio was set to 40 using "echo 40 > /proc/sys/vm/dirty_ratio"
Numa balancing was disabled using "echo 0 > /proc/sys/kernel/numa_balancing"
```

## Platform Notes

```
BIOS Configuration:
  Thermal Configuration set to Maximum Cooling
  Memory Patrol Scrubbing set to Disabled
  LLC Prefetch set to Enabled
  LLC Dead Line Allocation set to Disabled
  Workload Profile set to General Throughput Compute
  Minimum Processor Idle Power Core C-State set to C1E State
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL580 Gen10  
(2.40 GHz, Intel Xeon Gold 6148)

SPECint\_rate2006 = Not Run

SPECint\_rate\_base2006 = 3720

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017

## Platform Notes (Continued)

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on linux-j6ss Sat Dec 16 07:18:18 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>

From /proc/cpuinfo

```
model name : Intel(R) Xeon(R) Gold 6148 CPU @ 2.40GHz
 4 "physical id"s (chips)
 160 "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 : 20
  siblings  : 40
  physical 0: cores 0 1 2 3 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
  physical 1: cores 0 1 2 3 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
  physical 2: cores 0 1 2 3 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
  physical 3: cores 0 1 2 3 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
cache size : 28160 KB
```

From /proc/meminfo

```
MemTotal:      792270792 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

/usr/bin/lsb\_release -d

```
SUSE Linux Enterprise Server 12 SP3
```

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

```
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 3
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12-SP3"
VERSION_ID="12.3"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp3"
```

uname -a:

```
Linux linux-j6ss 4.4.73-5-default #1 SMP Tue Jul 4 15:33:39 UTC 2017
(b7ce4e4) x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Dec 16 06:59

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL580 Gen10  
(2.40 GHz, Intel Xeon Gold 6148)

**SPECint\_rate2006 = Not Run**

**SPECint\_rate\_base2006 = 3720**

**CPU2006 license:** 3

**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Dec-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Apr-2017

## Platform Notes (Continued)

SPEC is set to: /home/cpu2006

| Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
|------------|------|------|------|-------|------|------------|
| /dev/sda4  | xfs  | 517G | 188G | 330G  | 37%  | /home      |

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 U34 09/29/2017

Memory:

48x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

## General Notes

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

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

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.



# SPEC CINT2006 Result

Copyright 2006-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL580 Gen10  
(2.40 GHz, Intel Xeon Gold 6148)

SPECint\_rate2006 = Not Run

SPECint\_rate\_base2006 = 3720

CPU2006 license: 3

Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017

## Base Compiler Invocation

C benchmarks:

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2017/linux/lib/ia32

## Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32  
 401.bzip2: -D\_FILE\_OFFSET\_BITS=64  
 403.gcc: -D\_FILE\_OFFSET\_BITS=64  
 429.mcf: -D\_FILE\_OFFSET\_BITS=64  
 445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
 456.hmmer: -D\_FILE\_OFFSET\_BITS=64  
 458.sjeng: -D\_FILE\_OFFSET\_BITS=64  
 462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
 471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
 473.astar: -D\_FILE\_OFFSET\_BITS=64  
 483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch  
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

## 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 DL580 Gen10  
(2.40 GHz, Intel Xeon Gold 6148)

**SPECint\_rate2006 = Not Run**

**SPECint\_rate\_base2006 = 3720**

**CPU2006 license:** 3

**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Dec-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Apr-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 11:30:05 2018 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 13 June 2018.