



# SPEC® CINT2006 Result

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**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL560 Gen10  
(2.60 GHz, Intel Xeon Gold 6126)

**SPECint®2006 = Not Run**

**SPECint\_base2006 = 74.7**

**CPU2006 license:** 3

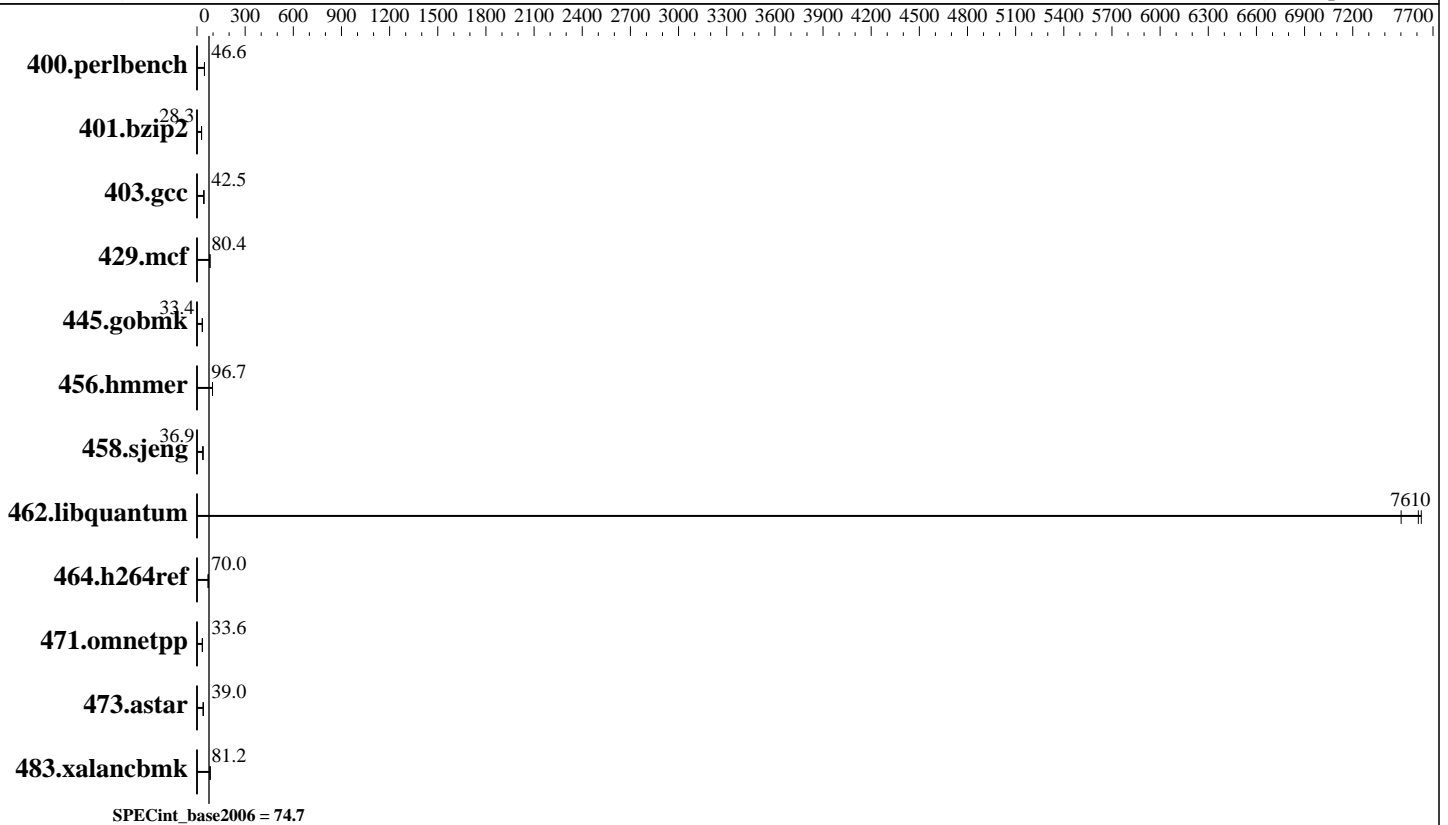
**Test sponsor:** HPE

**Tested by:** HPE

**Test date:** Dec-2017

**Hardware Availability:** Oct-2017

**Software Availability:** Apr-2017



## Hardware

**CPU Name:** Intel Xeon Gold 6126  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
**CPU MHz:** 2600  
**FPU:** Integrated  
**CPU(s) enabled:** 48 cores, 4 chips, 12 cores/chip  
**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:** 19.25 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 384 GB (48 x 8 GB 2Rx8 PC4-2666V-R)  
**Disk Subsystem:** 1 x 960 GB SATA SSD, RAID 0  
**Other Hardware:** None

## Software

**Operating System:** Red Hat Enterprise Linux Server release 7.3 (Maipo)  
 Kernel 3.10.0-514.el7.x86\_64  
**Compiler:** C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux  
**Auto Parallel:** Yes  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32/64-bit  
**Peak Pointers:** Not Applicable  
**Other Software:** Microquill SmartHeap V10.2



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>210</u></b>	<b><u>46.6</u></b>	210	46.6	210	46.4						
401.bzip2	<b><u>341</u></b>	<b><u>28.3</u></b>	340	28.3	341	28.3						
403.gcc	189	42.7	<b><u>189</u></b>	<b><u>42.5</u></b>	189	42.5						
429.mcf	113	81.0	<b><u>113</u></b>	<b><u>80.4</u></b>	116	78.9						
445.gobmk	<b><u>314</u></b>	<b><u>33.4</u></b>	314	33.4	314	33.4						
456.hammer	96.5	96.7	<b><u>96.5</u></b>	<b><u>96.7</u></b>	96.6	96.6						
458.sjeng	<b><u>328</u></b>	<b><u>36.9</u></b>	328	36.9	328	36.9						
462.libquantum	2.72	7630	<b><u>2.72</u></b>	<b><u>7610</u></b>	2.76	7500						
464.h264ref	315	70.2	<b><u>316</u></b>	<b><u>70.0</u></b>	317	69.9						
471.omnetpp	187	33.5	<b><u>186</u></b>	<b><u>33.6</u></b>	186	33.6						
473.astar	181	38.9	180	39.0	<b><u>180</u></b>	<b><u>39.0</u></b>						
483.xalancbmk	85.1	81.1	<b><u>84.9</u></b>	<b><u>81.2</u></b>	84.9	81.3						

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:  
Intel Hyper-Threading set to Disabled  
Thermal Configuration set to Maximum Cooling  
LLC Prefetch set to Enabled  
LLC Dead Line Allocation set to Disabled  
Stale A to S set to Enabled  
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  
Sysinfo program /home/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on DL560G10 Mon Dec 18 02:42:11 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>

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## Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6126 CPU @ 2.60GHz
 4 "physical id"s (chips)
48 "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 : 12
  siblings  : 12
  physical 0: cores 0 2 3 4 5 8 9 10 11 12 13 14
  physical 1: cores 0 1 3 5 6 8 9 10 11 12 13 14
  physical 2: cores 0 1 3 4 5 6 8 9 10 11 12 13
  physical 3: cores 0 1 3 4 5 6 8 9 10 11 12 13
cache size : 19712 KB

```

```

From /proc/meminfo
MemTotal:      395927168 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 DL560G10 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 18 02:39

SPEC is set to: /home/cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel_dl560g10-home	xfs	839G	40G	799G	5%	/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

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## Platform Notes (Continued)

Memory:

48x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz

(End of data from sysinfo program)

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact"

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

OMP\_NUM\_THREADS = "48"

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



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## 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-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-auto-p32

```

C++ benchmarks:

```

-xCORE-AVX2 -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>



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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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