## SPEC® CINT2006 Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant BL460c Gen10  
(3.00 GHz, Intel Xeon Platinum 8158)  

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### Benchmark Results

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### Hardware

- **CPU Name:** Intel Xeon Platinum 8158  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
- **CPU MHZ:** 3000  
- **FPU:** Integrated  
- **CPU(s) enabled:** 24 cores, 2 chips, 12 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:** 24.75 MB I+D on chip per core  
- **Other Cache:** None  
- **Memory:** 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)  
- **Disk Subsystem:** 1 x 480 GB SATA SSD, RAID 0  
- **Other Hardware:** None

### Software

- **Operating System:** Red Hat Enterprise Linux Server release 7.4 (Maipo)  
- **Kernel:** 3.10.0-693.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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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

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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
Files system 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 wtih "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
  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 /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
runtime on bl460c16 Mon Dec 11 13:16:01 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) Platinum 8158 CPU @ 3.00GHz
  2 "physical id"s (chips)
  24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
  cpu cores : 12
  siblings : 12
  physical 0: cores 0 1 2 3 4 9 10 16 18 19 25 26
  physical 1: cores 0 1 2 3 4 9 10 16 18 19 25 26
  cache size : 25344 KB

From /proc/meminfo
MemTotal: 197750296 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.4 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VARIANT="Server"
    VARIANT_ID="server"
    VERSION_ID="7.4"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.4 (Maipo)"
  redhat-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
  system-release-cpe: cpe:/o:redhat:enterprise_linux:7.4:ga:server

uname -a:
  Linux bl460c16 3.10.0-693.el7.x86_64 #1 SMP Thu Jul 6 19:56:57 EDT 2017
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 11 13:11

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 839G 38G 802G 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 I41 11/14/2017
Memory:
  4x UNKNOWN NOT AVAILABLE

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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 = "24"

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  
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- 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/HPE-Platform-Flags-Intel-V1.2-SKX-revH.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/HPE-Platform-Flags-Intel-V1.2-SKX-revH.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.

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