Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant BL460c Gen10
(2.10 GHz, Intel Xeon Gold 6130)

<table>
<thead>
<tr>
<th>SPECint base2006</th>
<th>74.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2006 license</td>
<td>3</td>
</tr>
<tr>
<td>Tested by</td>
<td>HPE</td>
</tr>
<tr>
<td>Test date</td>
<td>Dec-2017</td>
</tr>
<tr>
<td>Hardware Availability</td>
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<tr>
<td>Software Availability</td>
<td>Apr-2017</td>
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<table>
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<tr>
<th>Test</th>
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<tr>
<td>perlbench</td>
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<td>bzip2</td>
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<td>mcf</td>
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<td>libquantum</td>
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<td>omnetpp</td>
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<td>astar</td>
<td>39.1</td>
</tr>
<tr>
<td>xalancbmk</td>
<td>80.7</td>
</tr>
</tbody>
</table>

**SPECint base2006 = 74.2**

**Hardware**
- **CPU Name:** Intel Xeon Gold 6130
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz
- **CPU MHz:** 2100
- **FPU:** Integrated
- **CPU(s) enabled:** 32 cores, 2 chips, 16 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:** 22 MB I+D on chip per chip
- **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
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant BL460c Gen10  
(2.10 GHz, Intel Xeon Gold 6130)  

**SPEC CINT2006 Result**  

**SPECint2006 =** Not Run  
**SPECint_base2006 =** 74.2

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**Results Table**

<table>
<thead>
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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>7240</td>
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</tr>
</tbody>
</table>

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

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**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  
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)  
running on BL460c_RHEL7.4BL460c_RHEL7.4BL460c_RHEL7.4BL460c_RHEL7.4BL460c_RHEL7.4BL460c_R Mon Dec 18 14:49:01 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
Continued on next page
SPEC CINT2006 Result

Hewlett Packard Enterprise
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ProLiant BL460c Gen10
(2.10 GHz, Intel Xeon Gold 6130)

SPECint2006 = Not Run
SPECint_base2006 = 74.2

CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

Test date: Dec-2017
Hardware Availability: Nov-2017
Software Availability: Apr-2017

Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo

model name : Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz
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 : 16
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 22528 KB

From /proc/meminfo

MemTotal: 197749752 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 BL460c_RHEL7.4BL460c_RHEL7.4BL460c_RHEL7.4BL460c_RHEL7.4BL460c_R 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 18 14:44

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdb4 xfs 442G 62G 381G 14% /

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

Continued on next page
### SPEC CINT2006 Result

**Test Sponsor:** HPE  
**ProLiant BL460c Gen10**  
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#### SPECint2006 = Not Run  
**SPECint_base2006 = 74.2**

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### Platform Notes (Continued)

- **Memory:**
  - 4x UNKNOWN NOT AVAILABLE
  - 12x 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:
- KMP_AFFINITY = "granularity=fine,compact"
- LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
- OMP_NUM_THREADS = "32"

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](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`
Hewlett Packard Enterprise
(Test Sponsor: HPE)
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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.

Tested with SPEC CPU2006 v1.2.
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