Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant BL460c Gen10  
(2.40 GHz, Intel Xeon Gold 5115)  

SPECint®2006 = Not Run  
SPECint_base2006 = 60.6

| Test date: | Nov-2017 |
| Hardware Availability: | Oct-2017 |
| Software Availability: | Nov-2016 |

### Hardware
- **CPU Name:** Intel Xeon Gold 5115  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz  
- **CPU MHz:** 2400  
- **FPU:** Integrated  
- **CPU(s) enabled:** 20 cores, 2 chips, 10 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:** 13.75 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 256 GB (16 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)  
- **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)  
- **Compiler:** C/C++: Version 17.0.1.132 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
SPEC CINT2006 Result

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CPU2006 license: 3
Test sponsor: HPE
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Results Table

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</tbody>
</table>

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
IRQ balance service was stop using "service irqbalance stop"
Tuned-adm profile was set to Throughtput-Performance

Platform Notes

BIOS Configuration:
 Intel Hyperthreading 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
 Sysinfo program /root/cpu2006/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on linux-h3xn.perflab.hp.com Wed Nov 22 10:49:47 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
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Platform Notes (Continued)

From /proc/cpuinfo
- model name : Intel(R) Xeon(R) Gold 5115 CPU @ 2.40GHz
- 2 "physical id"s (chips)
- 20 "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 : 10
  - siblings : 10
  - physical 0: cores 0 1 2 3 4 8 9 10 11 12
  - physical 1: cores 0 1 2 3 4 8 9 10 11 12
- cache size : 14080 KB

From /proc/meminfo
- MemTotal: 263630492 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)

uname -a:
- Linux linux-h3xn.perflab.hp.com 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 Nov 22 10:42

SPEC is set to: /root/cpu2006
- Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda4 xfs 442G 26G 416G 6% /

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:
- 16x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2400 MHz

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**SPEC CINT2006 Result**

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**Platform Notes (Continued)**

*(End of data from sysinfo program)*

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**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** = "20"

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

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**Base Compiler Invocation**

- **C benchmarks**:  
  ```bash
  icc -m64
  ```

- **C++ benchmarks**:  
  ```bash
  icpc -m64
  ```

---

**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`

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**Base Optimization Flags**

- **C benchmarks**:  
  ```bash
  -xCORE-AVX512 -ipo -O3 -no-prec-div -parallel -qopt-prefetch -auto-p32
  ```

- **C++ benchmarks**:  
  ```bash
  -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
  -Wl,-z,muldefs -L/sh10.2 -lsmartheap64
  ```
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### Base Other Flags

C benchmarks:

```plaintext
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-revG.html](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revG.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-revG.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revG.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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