**SPEC® CINT2006 Result**

**Hewlett Packard Enterprise**
(Test Sponsor: HPE)
ProLiant DL380 Gen10
(2.50 GHz, Intel Xeon Platinum 8180)

**SPECint®_rate2006 = Not Run**

**SPECint_rate_base2006 = 2710**

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>HPE</th>
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<tbody>
<tr>
<td>Hardware Availability</td>
<td>Oct-2017</td>
</tr>
<tr>
<td>Software Availability</td>
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| Test Sponsor: HPE |
| Test date: Oct-2017 |

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| CPU Name: Intel Xeon Platinum 8180 |
| CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz |
| CPU MHz: 2500 |
| FPU: Integrated |
| CPU(s) enabled: 56 cores, 2 chips, 28 cores/chip, 2 threads/core |
| 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: 38.5 MB I+D on chip per chip |
| Other Cache: None |
| Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R) |
| Disk Subsystem: 1 x 480 GB SATA SSD, RAID 0 |
| Other Hardware: None |

| Software |

| Operating System: SUSE Linux Enterprise Server 12 (x86_64) SP2 Kernel 4.4.21-69-default |
| Compiler: C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux |
| Auto Parallel: No |
| File System: btrfs |
| System State: Run level 3 (multi-user) |
| Base Pointers: 32-bit |
| Peak Pointers: Not Applicable |
| Other Software: Microquill SmartHeap V10.2 |
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**Results Table**

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<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>2100</td>
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<td>851</td>
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<td>2650</td>
<td>291</td>
<td>2650</td>
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</tr>
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</table>

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>

**Platform Notes**

BIOS Configuration:  
Thermal Configuration set to Maximum Cooling  
Memory Patrol Scrubbing set to Disabled  
LLC Prefetcher 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

Sysinfo program /cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on local Fri Oct 13 09:07:23 2017

Continued on next page
### Platform Notes (Continued)

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) Platinum 8180 CPU @ 2.50GHz
- 2 "physical id"s (chips)
- 112 "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 : 28
  - siblings : 56
  - physical 0: cores 0 1 2 3 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27 28 29 30
  - physical 1: cores 0 1 2 3 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27 28 29 30
- cache size : 39424 KB

From /proc/meminfo

- MemTotal: 197528520 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

SUSE Linux Enterprise Server 12 SP2

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

SuSE-release:
- NAME="SLES"
- VERSION="12-SP2"
- VERSION_ID="12.2"
- PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
- ID="sles"
- ANSI_COLOR="0;32"
- CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:

- Linux local 4.4.21-68-default #1 SMP Tue Oct 18 18:19:37 UTC 2016 (63cf368)
- x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 11 21:37

SPEC is set to: /cpu2006

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CPU2006 license: 3
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Platform Notes (Continued)
/dev/sda3 btrfs 445G 248G 195G 57% /
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 U30 09/29/2017
Memory:
24x 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:
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh10.2"

Binaries compiled on a system with 2x Intel Xeon Platinum 8180 CPU + 192GB RAM
memory using SUSE Linux Enterprise Server 12 SP2

Base Compiler Invocation

C benchmarks:
icc -m32 -L/opt/intel/compilers_and_libraries_2018.0.082/linux/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2018.0.082/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
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**CPU2006 license:** 3  
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### Base Optimization Flags

**C benchmarks:**
- `-xHOST`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-qopt-mem-layout-trans=3`

**C++ benchmarks:**
- `-xHOST`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-qopt-mem-layout-trans=3`  
- `-Wl,-z,muldefs`  
- `-L/cpu2006/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/HPE-Platform-Flags-Intel-V1.2-SKX-revD.html](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revD.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-revD.xml](http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revD.xml)