**SPEC® CINT2006 Result**

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL380 Gen10  
(1.70 GHz, Intel Xeon Bronze 3106)

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
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**SPECint_rate2006 = Not Run**  
SPECint_rate_base2006 = 433

**Test date:** Nov-2017  
**Hardware Availability:** Oct-2017  
**Software Availability:** Apr-2017

<table>
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<td>401.bzip2</td>
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<td>483.xalancbmk</td>
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</table>

**Hardware**

- **CPU Name:** Intel Xeon Bronze 3106  
- **CPU Characteristics:**  
  - **CPU MHz:** 1700  
  - **FPU:** Integrated  
  - **CPU(s) enabled:** 16 cores, 2 chips, 8 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:** 11 MB I+D on chip per chip  
  - **Other Cache:** None  
  - **Memory:** 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R, running at 2133)  
  - **Disk Subsystem:** 1 x 960 GB SATA SSD, RAID 0  
  - **Other Hardware:** None

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP3  
  - Kernel 4.4.73-5-default  
- **Compiler:** C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux  
- **Auto Parallel:** No  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 32-bit  
- **Peak Pointers:** Not Applicable  
- **Other Software:** Microquill SmartHeap V10.2

Standard Performance Evaluation Corporation  
info@spec.org
http://www.spec.org/
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### Results Table

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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>`  
- `irqbalance disabled with "service irqbalance stop"`  
- `tuned profile set with "tuned-adm profile throughput-performance"`  
- `VM Dirty ratio was set to 40 using "echo 40 > /proc/sys/vm/dirty_ratio"`  
- `Numa balancing was disabled using "echo 0 > /proc/sys/kernel/ numa_balancing"`

### Platform Notes

BIOS Configuration:  
- 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 Throughput Compute  
- Minimum Processor Idle Power Core C-State set to C1E  
- Sysinfo program /home/cpu2006/config/sysinfo.rev6993

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Platform Notes (Continued)  

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on linux-b7s1 Tue Nov 14 12:22:36 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  

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) Bronze 3106 CPU @ 1.70GHz  
2 "physical id"s (chips)  
16 "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 : 8  
siblings : 8  
physical 0: cores 0 1 2 3 4 5 6 7  
physical 1: cores 0 1 2 3 4 5 6 7  
cache size : 11264 KB  

From /proc/meminfo  
MemTotal: 197750952 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB  

/usr/bin/lsb_release -d  
SUSE Linux Enterprise Server 12 SP3  

From /etc/*release* /etc/*version*  
SuSE-release:  
SUSE Linux Enterprise Server 12 (x86_64)  
VERSION = 12  
PATCHLEVEL = 3  
# This file is deprecated and will be removed in a future service pack or 
release.  
# Please check /etc/os-release for details about this release.  

os-release:  
NAME="SLES"  
VERSION="12-SP3"  
VERSION_ID="12.3"  
PATTERN="SUSE Linux Enterprise Server 12 SP3"  
ID="sles"  
ANSI_COLOR="0;32"  
CPE_NAME="cpe:/o:suse:sles:12:sp3"  

uname -a:  
Linux linux-b7s1 4.4.73-5-default #1 SMP Tue Jul 4 15:33:39 UTC 2017  
(b7ce4e4) x86_64 x86_64 x86_64 GNU/Linux  

run-level 3 Nov 14 10:30  
SPEC is set to: /home/cpu2006  
Continued on next page
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Platform Notes (Continued)

Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
------------|------|------|------|-------|------|------------|
/dev/sda4   | xfs  | 852G | 11G  | 842G  | 2%   | /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 U30 10/11/2017  
Memory:  
24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666 MHz, configured at 2133 MHz

(End of data from sysinfo program)

**General Notes**

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu206/sh10.2"

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

**Base Compiler Invocation**

C benchmarks:  
```latex  
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32  
```

C++ benchmarks:  
```latex  
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/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  
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473.astar: -D_FILE_OFFSET_BITS=64  
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
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Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/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/Intel-ic17.0-official-linux64-revF.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/Intel-ic17.0-official-linux64-revF.xml
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revG.xml

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For other inquiries, please contact webmaster@spec.org.

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