### SPEC® CINT2006 Result

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
Synergy 480 Gen10  
(2.60 GHz, Intel Xeon Silver 4112)  

**SPECint$_{\text{rate}2006} =$ Not Run**  
**SPECint$_{\text{rate}\_\text{base}2006} =$ 418**

| Program | Copies | 150 | 300 | 450 | 600 | 750 | 900 | 1100 | 1300 | 1500 | 1700 | 1900 | 2100 | 2300 | 2500 | 2700 | 2900 | 3100 | 3300 | 3500 | 3700 | 3900 | 4100 | 4350 |
|---------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| perlbench | 16   |     |     |     |     | 300 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| bzip2 | 16   | 186 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| gcc | 16   | 322 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| mcf | 16   | 607 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| gobmk | 16   | 261 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| hammmer | 16   | 632 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| sjeng | 16   | 280 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| libquantum | 16   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 4290 |
| h264ref | 16   | 479 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| omnetpp | 16   | 208 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| astar | 16   | 243 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| xalancbmk | 16   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

**Hardware**

- **CPU Name:** Intel Xeon Silver 4112  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.00 GHz  
- **CPU MHz:** 2600  
- **FPU:** Integrated  
- **CPU(s) enabled:** 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
- **CPU(s) orderable:** 1, 2 chip(s)  
- **Primary Cache:** 32 KB L1 + 32 KB D on chip per core  
- **Secondary Cache:** 1 MB I+D on chip per core  
- **L3 Cache:** 8.25 MB I+D on chip per chip  
- **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)  
- **Disk Subsystem:** 1 x 960 GB SATA SSD, RAID 0  
- **Other Cache:** None  

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 (x86_64) SP2  
  Kernel 4.4.21-69-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
Hewlett Packard Enterprise
(Test Sponsor: HPE)
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(2.60 GHz, Intel Xeon Silver 4112)

SPEC CINT2006 Result

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 418

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
Filesysten page cache cleared with:
    shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
runcpect 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 State
    Workload Profile set to Custom

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## SPECint_rate2006

### SPECint_rate_base2006

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>3</th>
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<tbody>
<tr>
<td>Test sponsor:</td>
<td>HPE</td>
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<tr>
<td>Tested by:</td>
<td>HPE</td>
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<tr>
<td>Test date:</td>
<td>Dec-2017</td>
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<td>Hardware Availability:</td>
<td>Oct-2017</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Apr-2017</td>
</tr>
</tbody>
</table>

### Platform Notes (Continued)

Sub-NUMA Cluster set to Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-vjuj Wed Dec  6 13:44:24 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) Silver 4112 CPU @ 2.60GHz
- 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 : 4
  - siblings : 8
  - physical 0: cores 1 2 4 5
  - physical 1: cores 0 2 3 4
- cache size : 8448 KB

From /proc/meminfo
- MemTotal:       395932484 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:
- SUSE Linux Enterprise Server 12 (x86_64)
- VERSION = 12
- PATCHLEVEL = 2
  - # 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-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 linux-vjuj 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016 (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 6 13:42

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Continued on next page
Platform Notes (Continued)

SPEC is set to: /home/cpu2006
  Filesystem  Type  Size  Used  Avail  Use%  Mounted on
  /dev/sda4    xfs   852G  6.4G  846G   1%  /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 i42 09/27/2017
Memory:
  24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2400 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/cpu2006/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:
  icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks:
  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
  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
SPEC CINT2006 Result

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(Test Sponsor: HPE)
Synergy 480 Gen10
(2.60 GHz, Intel Xeon Silver 4112)

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 418

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

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

Base Portability Flags (Continued)
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

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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Tested with SPEC CPU2006 v1.2.
Originally published on 8 January 2018.