SPEC® CINT2006 Result

Hewlett Packard Enterprise

(Test Sponsor: HPE)

Synergy 480 Gen10
(1.70 GHz, Intel Xeon Bronze 3104)

$SPECint^{®}\_rate2006 =$ Not Run

SPECint_rate_base2006 = 324

CPU2006 license: 3	**Test date:**	Dec-2017
Test sponsor: HPE	**Hardware Availability:**	Oct-2017
Tested by: HPE	**Software Availability:**	Sep-2017

Copies 0 100 250 400 550 700 850 1000 1150 1300 1450 1600 1750 1900 2050 2200 2350 2500 2650 2800 2950 3100 3250 3450

- 400.perlbench 12 — 240
- 401.bzip2 12 — 139
- 403.gcc 12 — 249
- 429.mcf 12 — 468
- 445.gobmk 12 — 176
- 456.hmmer 12 — 467
- 458.sjeng 12 — 203
- 462.libquantum 12 — 3430
- 464.h264ref 12 — 389
- 471.omnetpp 12 — 185
- 473.astar 12 — 183
- 483.xalancbmk 12 — 463

SPECint_rate_base2006 = 324

Hardware

CPU Name:	Intel Xeon Bronze 3104
CPU Characteristics:	
CPU MHz:	1700
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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:	8.25 MB I+D on chip per chip
Other Cache:	None
Memory:	384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2133)
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:	xfs
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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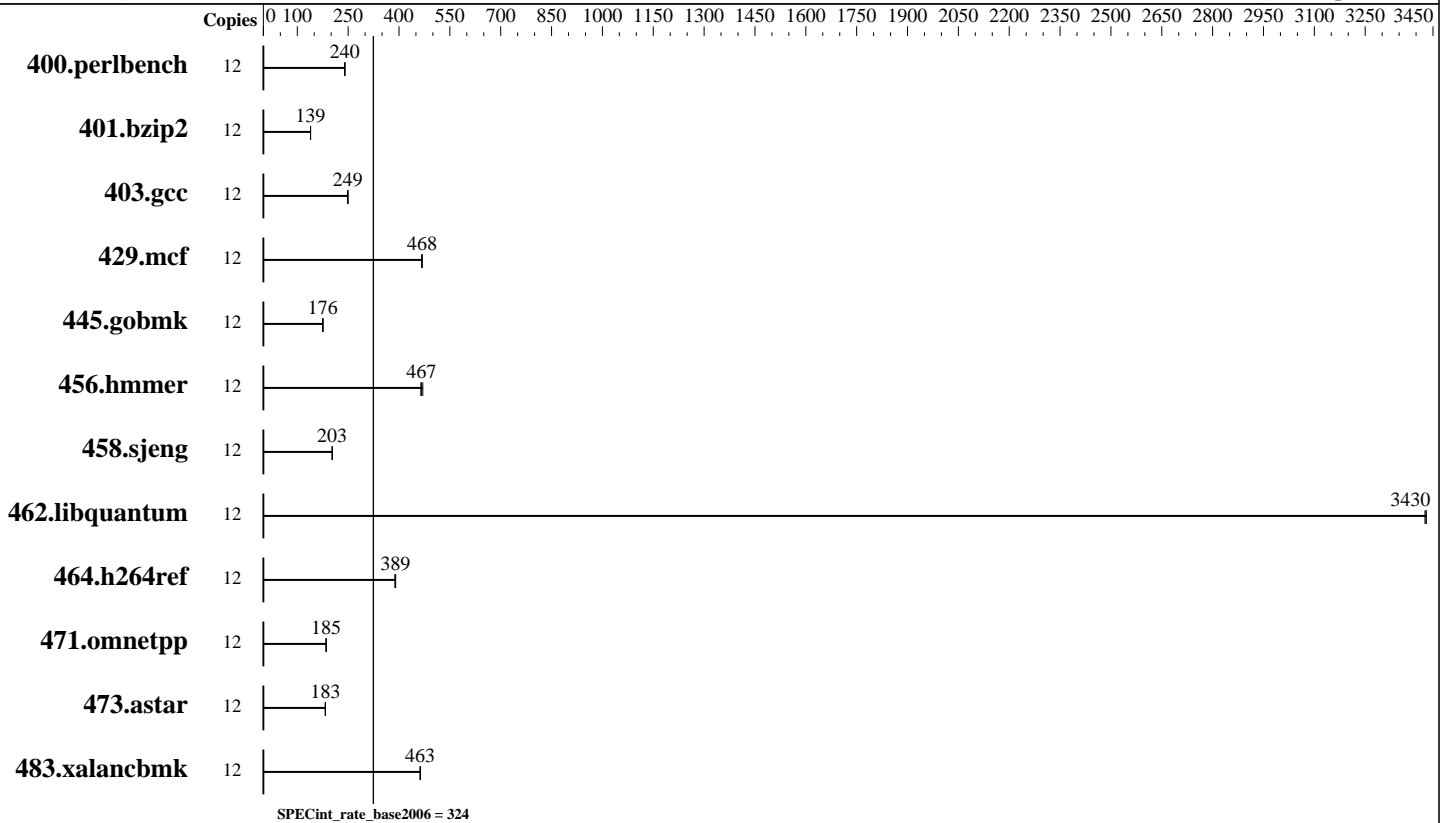
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	12	489	240	488	240	**488**	**240**							
401.bzip2	12	832	139	**832**	**139**	833	139							
403.gcc	12	**387**	**249**	389	248	387	249							
429.mcf	12	234	469	234	467	**234**	**468**							
445.gobmk	12	**717**	**176**	717	176	717	176							
456.hmmer	12	**240**	**467**	241	464	238	470							
458.sjeng	12	715	203	715	203	**715**	**203**							
462.libquantum	12	72.6	3430	**72.5**	**3430**	72.5	3430							
464.h264ref	12	685	388	**682**	**389**	681	390							
471.omnetpp	12	**405**	**185**	406	185	405	185							
473.astar	12	**461**	**183**	461	183	460	183							
483.xalancbmk	12	179	464	179	462	**179**	**463**							

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 wtih "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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Platform Notes (Continued)

```
 Sub-NUMA Clustering set to Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on sy480_hjp_suse Sun Dec 10 09:33:58 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 3104 CPU @ 1.70GHz
      2 "physical id"s (chips)
      12 "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 : 6
      siblings  : 6
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
   cache size : 8448 KB

From /proc/meminfo
   MemTotal:        395933012 kB
   HugePages_Total:         0
   Hugepagesize:         2048 kB

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 sy480_hjp_suse 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 10 09:33

SPEC is set to: /home/cpu2006
   Filesystem      Type   Size   Used Avail Use% Mounted on
```

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Platform Notes (Continued)

```
     /dev/sda3      xfs   407G  117G  291G  29% /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 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/libs/32:/home/cpu2006/libs/64:/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_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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Base Optimization Flags

C benchmarks:

    -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
    -qopt-mem-layout-trans=3

C++ benchmarks:

    -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
    -qopt-mem-layout-trans=3 -Wl,-z,muldefs
    -L/home/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/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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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