SPEC® CINT2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10
(2.00 GHz, Intel Xeon Platinum 8164)

$SPECint^®\_rate2006 =$ Not Run

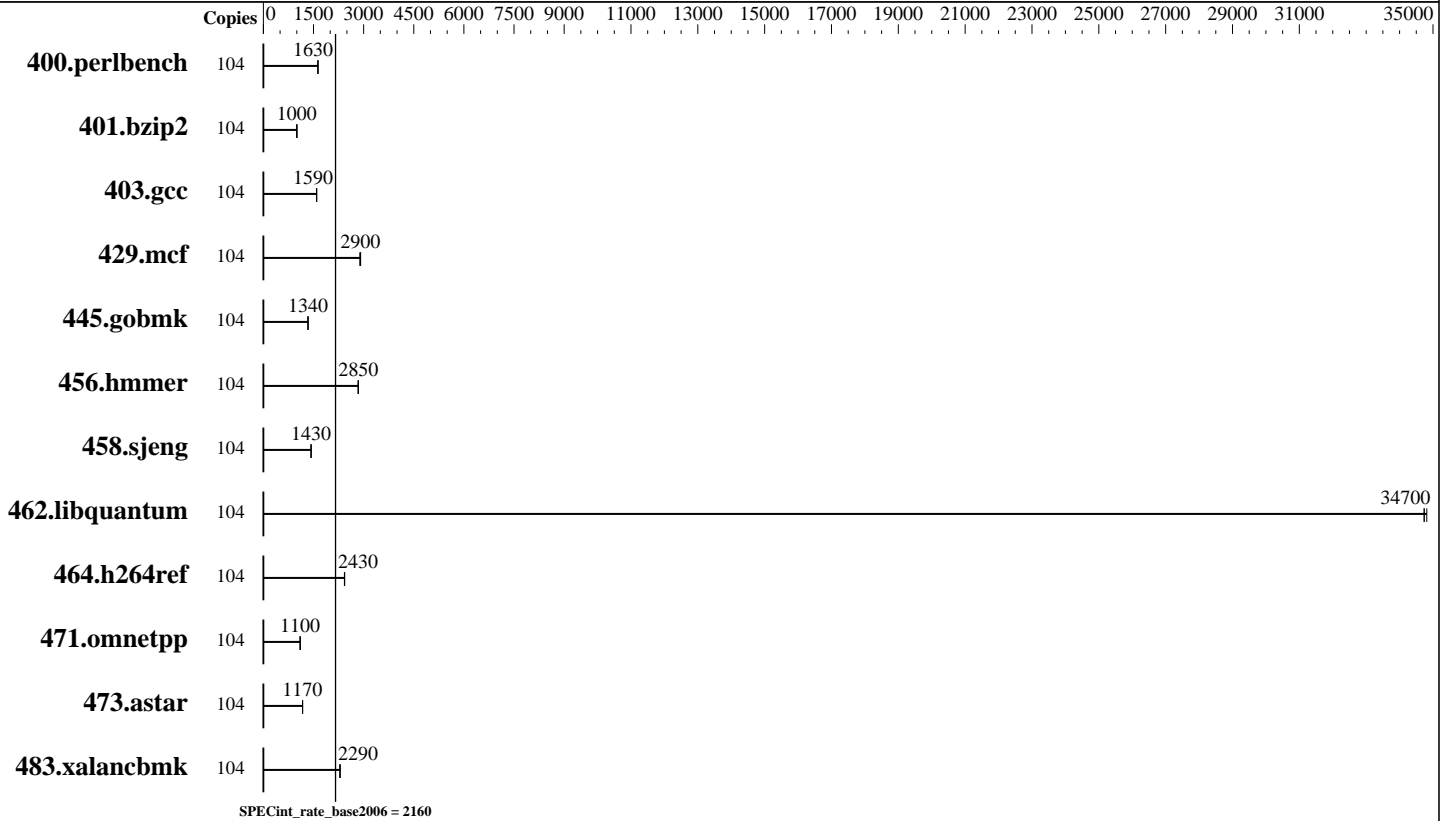$SPECint\_rate\_base2006 =$ 2160

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

SPECint_rate_base2006 = 2160

Benchmark	Copies	Result
400.perlbench	104	1630
401.bzip2	104	1000
403.gcc	104	1590
429.mcf	104	2900
445.gobmk	104	1340
456.hmmer	104	2850
458.sjeng	104	1430
462.libquantum	104	34700
464.h264ref	104	2430
471.omnetpp	104	1100
473.astar	104	1170
483.xalancbmk	104	2290

Hardware

CPU Name:	Intel Xeon Platinum 8164
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	52 cores, 2 chips, 26 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:	35.75 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 960 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 17.0.3.191 of Intel C/C++ Compiler for Linux
Auto Parallel:	No
File System:	Btrfs
System State:	Run level 5 (multi-user w/GUI)
Base Pointers:	32-bit
Peak Pointers:	Not Applicable
Other Software:	Microquill SmartHeap V10.2

SPEC CINT2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

SPECint_rate2006 =   Not Run

ProLiant DL380 Gen10
(2.00 GHz, Intel Xeon Platinum 8164)

SPECint_rate_base2006 = 2160

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

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

Results Table

Benchmark	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	104	622	1630	**622**	**1630**	623	1630							
401.bzip2	104	**1002**	**1000**	1000	1000	1005	999							
403.gcc	104	**526**	**1590**	526	1590	524	1600							
429.mcf	104	**327**	**2900**	326	2910	329	2890							
445.gobmk	104	817	1340	816	1340	**816**	**1340**							
456.hmmer	104	**341**	**2850**	341	2850	343	2830							
458.sjeng	104	**881**	**1430**	882	1430	881	1430							
462.libquantum	104	**62.0**	**34700**	62.0	34700	61.9	34800							
464.h264ref	104	949	2430	**948**	**2430**	946	2430							
471.omnetpp	104	**590**	**1100**	590	1100	590	1100							
473.astar	104	623	1170	**622**	**1170**	622	1170							
483.xalancbmk	104	314	2290	**313**	**2290**	312	2300							

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
     Memory Patrol Scrubbing set to Disabled
     LLC Prefetcher set to Enabled
     LLC Dead Line Allocation set to Disabled
     Workload Pofile set to General Throughput Compute
      Minimum Processor Idle Power Core C-State set to C1E

Hewlett Packard Enterprise

(Test Sponsor: HPE)

SPECint_rate2006 =   Not Run

ProLiant DL380 Gen10
(2.00 GHz, Intel Xeon Platinum 8164)

SPECint_rate_base2006 = 2160

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

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

Platform Notes (Continued)

```
Sysinfo program /cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on dl380-sys2-sles Fri Oct  6 22:14:22 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) Platinum 8164 CPU @ 2.00GHz
      2 "physical id"s (chips)
      104 "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 : 26
      siblings  : 52
      physical 0: cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27
      28 29
      physical 1: cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27
      28 29
   cache size : 36608 KB

From /proc/meminfo
   MemTotal:      197544148 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 dl380-sys2-sles 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
   (9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

Continued on next page

SPEC CINT2006 Result

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10
(2.00 GHz, Intel Xeon Platinum 8164)

SPECint_rate2006 =   Not Run

SPECint_rate_base2006 = 2160

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

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

Platform Notes (Continued)

```
   run-level 5 Oct 6 21:43

   SPEC is set to: /cpu2006
      Filesystem      Type    Size   Used Avail Use% Mounted on
      /dev/sdb3       btrfs  489G   12G  477G   3% /
   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/lib/ia32:/cpu2006/lib/intel64:/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
```

SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10
(2.00 GHz, Intel Xeon Platinum 8164)

SPECint_rate2006 =   Not Run

SPECint_rate_base2006 = 2160

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

Base Portability Flags (Continued)

```
      473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

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/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-revD.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-revD.xml

SPEC and SPECint are registered trademarks of the Standard Performance
Evaluation Corporation. All other brand and product names appearing in
this result are trademarks or registered trademarks of their respective
holders.

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

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Nov 1 00:54:27 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 31 October 2017.