SPEC® CINT2006 Result

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Hewlett Packard Enterprise
(Test Sponsor: HPE)

Superdome Flex
(3.00 GHz, Intel Xeon Gold 6154)

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 15500

CPU2006 license:	3	**Test date:**	Dec-2017
Test sponsor:	HPE	**Hardware Availability:**	Mar-2018
Tested by:	HPE	**Software Availability:**	Mar-2018

Hardware

CPU Name:	Intel Xeon Gold 6154
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	288 cores, 16 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	4 to 32 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	24.75 MB I+D on chip per chip
Other Cache:	None
Memory:	6 TB (192 x 32 GB 2Rx4 PC4-2666V-R)
Disk Subsystem:	6 TB tmpfs
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 (x86_64) SP2, Kernel 4.4.74-92.38-default
Compiler:	C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux
Auto Parallel:	No
File System:	tmpfs
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	Not Applicable
Other Software:	Microquill SmartHeap V10.2, HPE Foundation Software 1.0, Build 717a270.sles12sp2-1709012000

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Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	576	465	12100	463	12200	**464**	**12100**							
401.bzip2	576	823	6750	**822**	**6760**	817	6800							
403.gcc	576	437	10600	**438**	**10600**	438	10600							
429.mcf	576	**277**	**18900**	277	19000	278	18900							
445.gobmk	576	**588**	**10300**	589	10300	581	10400							
456.hmmer	576	249	21600	249	21600	**249**	**21600**							
458.sjeng	576	634	11000	631	11000	**632**	**11000**							
462.libquantum	576	44.4	269000	**44.3**	**269000**	44.3	270000							
464.h264ref	576	698	18300	**692**	**18400**	691	18500							
471.omnetpp	576	**511**	**7050**	511	7050	511	7050							
473.astar	576	490	8250	**487**	**8300**	487	8310							
483.xalancbmk	576	**250**	**15900**	249	15900	251	15900							

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 with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
The tmpfs filesystem was set up with:
   mkdir -p /dev/shm/cpu2006-16S
   mount -t tmpfs -o size=6144G,rw tmpfs /dev/shm/cpu2006-16S
```

Platform Notes

```
Rack Management Controller setting:
   modify npar pnum=0 ras=hpc

Sysinfo program /dev/shm/cpu2006-16S/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on uv4test35-sys Thu Dec  7 19:52:21 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
```

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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) Gold 6154 CPU @ 3.00GHz
      16 "physical id"s (chips)
      576 "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 : 18
      siblings  : 36
      physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 8: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 9: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 10: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 11: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 12: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 13: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 14: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 15: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
   cache size : 25344 KB

From /proc/meminfo
   MemTotal:       6145746556 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.
   hpe-foundation-release: HPE Foundation Software 1.0, Build
   717a270.sles12sp2-1709012000
   hpe-mpi-release: HPE MPI 1.2, Build 718a13.sles12sp2-1710021900
   os-release:
      NAME="SLES"
      VERSION="12-SP2"
      VERSION_ID="12.2"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
```

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Platform Notes (Continued)

```
        ID="sles"
        ANSI_COLOR="0;32"
        CPE_NAME="cpe:/o:suse:sles:12:sp2"
     sgi-release: SGI Performance Suite 1.16

  uname -a:
     Linux uv4test35-sys 4.4.74-92.38-default #1 SMP Tue Sep 12 19:43:46 UTC 2017
     (545c055) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Dec 7 12:57

  SPEC is set to: /dev/shm/cpu2006-16S
     Filesystem     Type   Size  Used Avail Use% Mounted on
     tmpfs          tmpfs  6.0T  2.0G  6.0T   1% /dev/shm/cpu2006-16S
  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.


  (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/dev/shm/cpu2006-16S/lib/ia32:/dev/shm/cpu2006-16S/lib/intel64:/dev/shm/cpu2006-16S/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`

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Base Portability Flags (Continued)

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

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-Superdome_Flex-RevA.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-Superdome_Flex-RevA.xml

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