SPEC® CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)

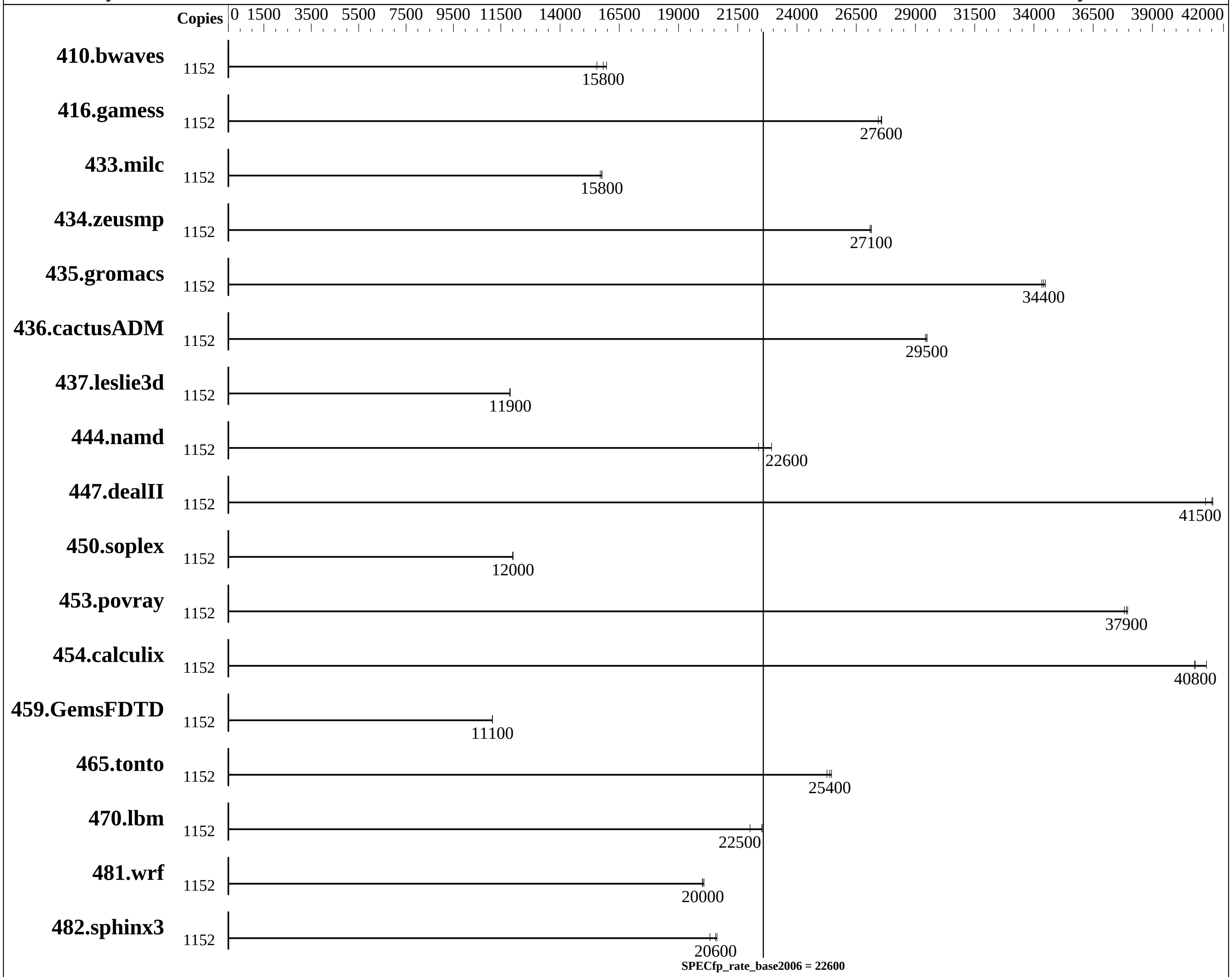
Superdome Flex
(3.00 GHz, Intel Xeon Gold 6154)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 22600

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

Test date: Dec-2017
Hardware Availability: Mar-2018
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:	576 cores, 32 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

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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; Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux
Auto Parallel:	No
File System:	tmpfs
System State:	Run level 3 (multi-user)

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L3 Cache: 24.75 MB I+D on chip per chip
Other Cache: None
Memory: 12 TB (384 x 32 GB 2Rx4 PC4-2666V-R)
Disk Subsystem: 12 TB tmpfs
Other Hardware: None

Base Pointers: 32/64-bit
Peak Pointers: Not Applicable
Other Software: HPE Foundation Software 1.0, Build 717a270.sles12sp2-1709012000

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	1152	**989**	**15800**	981	16000	1006	15600							
416.gamess	1152	818	27600	**819**	**27600**	822	27400							
433.milc	1152	671	15800	**671**	**15800**	674	15700							
434.zeusmp	1152	387	27100	**386**	**27100**	386	27100							
435.gromacs	1152	**239**	**34400**	239	34500	240	34300							
436.cactusADM	1152	467	29500	**467**	**29500**	468	29400							
437.leslie3d	1152	**910**	**11900**	910	11900	912	11900							
444.namd	1152	**409**	**22600**	403	22900	413	22400							
447.dealII	1152	317	41600	320	41200	**317**	**41500**							
450.soplex	1152	801	12000	**800**	**12000**	800	12000							
453.povray	1152	162	37800	**162**	**37900**	161	38000							
454.calculix	1152	**233**	**40800**	230	41300	233	40800							
459.GemsFDTD	1152	1096	11100	1097	11100	**1097**	**11100**							
465.tonto	1152	449	25300	445	25500	**447**	**25400**							
470.lbm	1152	**703**	**22500**	703	22500	719	22000							
481.wrf	1152	643	20000	**643**	**20000**	641	20100							
482.sphinx3	1152	1105	20300	**1092**	**20600**	1089	20600							

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/cpu2006-32S
   mount -t tmpfs -o size=12288G,rw tmpfs /dev/shm/cpu2006-32S
```

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Platform Notes

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

Sysinfo program /dev/shm/cpu2006-32S/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on uv4test35-sys Mon Dec 11 17:15:47 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) Gold 6154 CPU @ 3.00GHz
      32 "physical id"s (chips)
      1152 "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
      physical 16: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 17: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 18: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 19: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 20: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 21: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 22: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 23: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 24: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 25: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 26: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 27: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 28: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 29: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 30: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 31: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
```

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Platform Notes (Continued)

```
   cache size : 25344 KB

From /proc/meminfo
   MemTotal:       12293889700 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"
      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 10 17:38

SPEC is set to: /dev/shm/cpu2006-32S
   Filesystem     Type   Size  Used Avail Use% Mounted on
   tmpfs          tmpfs   12T  2.0G   12T   1% /dev/shm/cpu2006-32S
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/cpu2006-32S/lib/ia32:/dev/shm/cpu2006-32S/lib/intel64:/dev/shm/cpu2006-32S/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 -m64

C++ benchmarks:
    icpc -m64

Fortran benchmarks:
    ifort -m64

Benchmarks using both Fortran and C:
    icc -m64 ifort -m64

Base Portability Flags

410.bwaves:	-DSPEC_CPU_LP64
416.gamess:	-DSPEC_CPU_LP64
433.milc:	-DSPEC_CPU_LP64
434.zeusmp:	-DSPEC_CPU_LP64
435.gromacs:	-DSPEC_CPU_LP64 -nofor_main
436.cactusADM:	-DSPEC_CPU_LP64 -nofor_main
437.leslie3d:	-DSPEC_CPU_LP64
444.namd:	-DSPEC_CPU_LP64
447.dealII:	-DSPEC_CPU_LP64
450.soplex:	-DSPEC_CPU_LP64
453.povray:	-DSPEC_CPU_LP64
454.calculix:	-DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD:	-DSPEC_CPU_LP64
465.tonto:	-DSPEC_CPU_LP64
470.lbm:	-DSPEC_CPU_LP64
481.wrf:	-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3:	-DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
    -qopt-mem-layout-trans=3

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Base Optimization Flags (Continued)

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

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

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

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