SPEC® CFP2006 Result

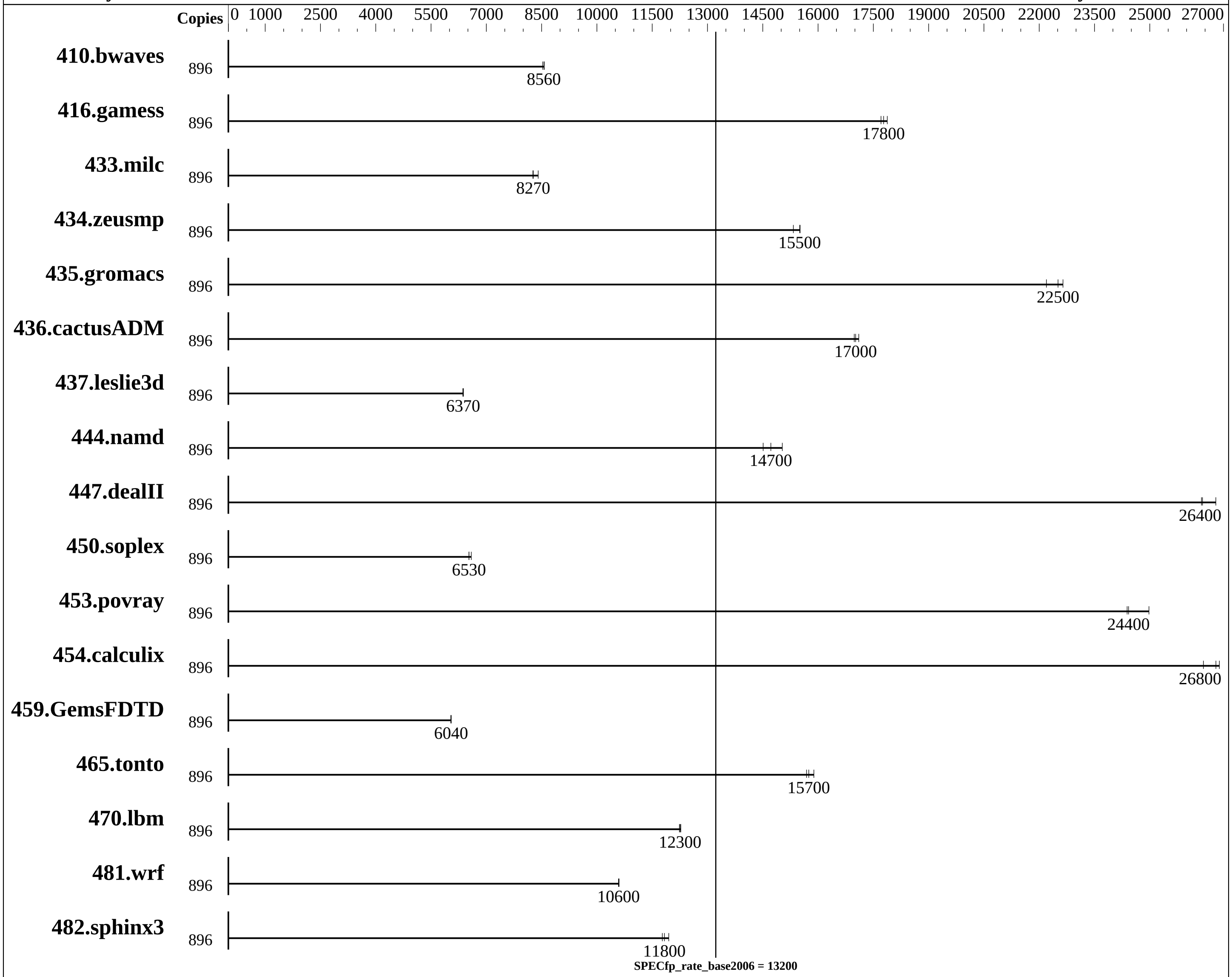
Hewlett Packard Enterprise
(Test Sponsor: HPE)

Superdome Flex
(2.50 GHz, Intel Xeon Platinum 8180)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 13200

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 Platinum 8180
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	448 cores, 16 chips, 28 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) SP3, Kernel 4.4.92-6.30-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:	38.5 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

Base Pointers:	32/64-bit
Peak Pointers:	Not Applicable
Other Software:	HPE Foundation Software 1.0, Build 717a130.sles12sp3-1710052000

Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	896	**1422**	**8560**	1421	8570	1428	8530							
416.gamess	896	991	17700	**987**	**17800**	981	17900							
433.milc	896	995	8260	**994**	**8270**	978	8410							
434.zeusmp	896	532	15300	**526**	**15500**	526	15500							
435.gromacs	896	**284**	**22500**	288	22200	283	22600							
436.cactusADM	896	**629**	**17000**	631	17000	626	17100							
437.leslie3d	896	**1322**	**6370**	1321	6380	1324	6360							
444.namd	896	495	14500	**488**	**14700**	478	15000							
447.dealII	896	388	26400	**388**	**26400**	383	26800							
450.soplex	896	1144	6530	**1144**	**6530**	1134	6590							
453.povray	896	**195**	**24400**	195	24400	191	25000							
454.calculix	896	**276**	**26800**	279	26500	275	26900							
459.GemsFDTD	896	1575	6040	1572	6050	**1573**	**6040**							
465.tonto	896	562	15700	**560**	**15700**	555	15900							
470.lbm	896	**1004**	**12300**	1006	12200	1003	12300							
481.wrf	896	**945**	**10600**	945	10600	944	10600							
482.sphinx3	896	**1476**	**11800**	1483	11800	1461	11900							

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 uv4test40-sys Mon Dec 18 03:16:14 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 8180 CPU @ 2.50GHz
      16 "physical id"s (chips)
      896 "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 : 28
      siblings  : 56
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 8: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 9: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
      25 26 27 28 29 30
      physical 10: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
      24 25 26 27 28 29 30
      physical 11: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
      24 25 26 27 28 29 30
      physical 12: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
      24 25 26 27 28 29 30
      physical 13: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
      24 25 26 27 28 29 30
      physical 14: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
      24 25 26 27 28 29 30
      physical 15: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
      24 25 26 27 28 29 30
```

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Platform Notes (Continued)

```
      cache size : 39424 KB

   From /proc/meminfo
      MemTotal:       6145710096 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      SUSE Linux Enterprise Server 12 SP3

   From /etc/*release* /etc/*version*
      SuSE-release:
         SUSE Linux Enterprise Server 12 (x86_64)
         VERSION = 12
         PATCHLEVEL = 3
         # 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
      717a130.sles12sp3-1710052000
      os-release:
         NAME="SLES"
         VERSION="12-SP3"
         VERSION_ID="12.3"
         PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
         ID="sles"
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:suse:sles:12:sp3"

   uname -a:
      Linux uv4test40-sys 4.4.92-6.30-default #1 SMP Mon Dec 4 08:08:30 UTC 2017
      (1fb0e00) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Dec 17 01:00

   SPEC is set to: /dev/shm/cpu2006-16S
      Filesystem     Type   Size  Used Avail Use% Mounted on
      tmpfs          tmpfs  6.0T  378G  5.7T   7% /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.

     BIOS HPE IP147.006.000.143.000.1712051837 12/05/2017
     Memory:
      192x Hynix HMA84GR7AFR4N-VK 32 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 = "/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 -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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