SPEC® CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Gold 6142)

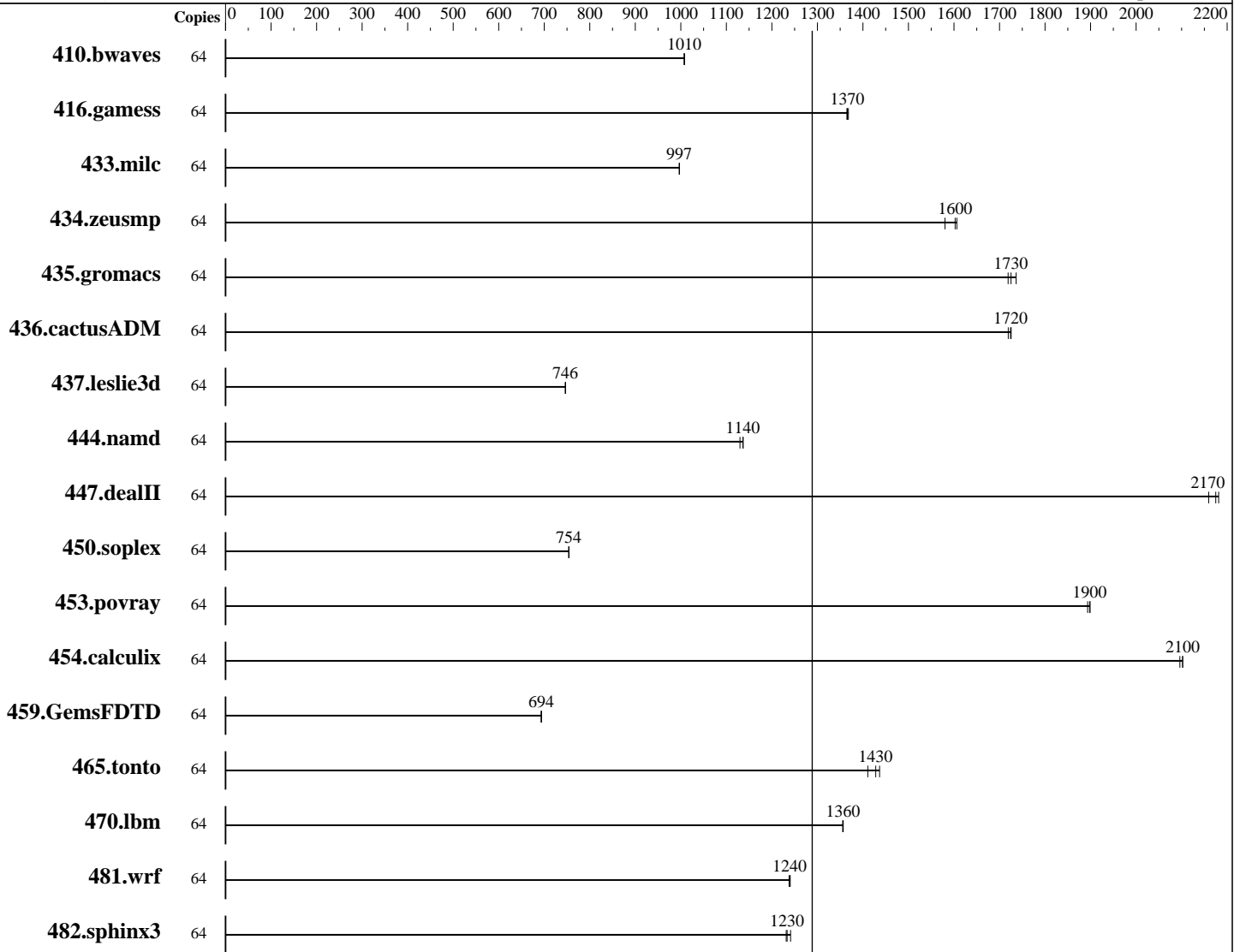$SPECfp^{®}\_rate2006 =$ Not Run

$SPECfp\_rate\_base2006 =$ 1290

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

Benchmark	Copies	Result
410.bwaves	64	1010
416.gamess	64	1370
433.milc	64	997
434.zeusmp	64	1600
435.gromacs	64	1730
436.cactusADM	64	1720
437.leslie3d	64	746
444.namd	64	1140
447.dealII	64	2170
450.soplex	64	754
453.povray	64	1900
454.calculix	64	2100
459.GemsFDTD	64	694
465.tonto	64	1430
470.lbm	64	1360
481.wrf	64	1240
482.sphinx3	64	1230

SPECfp_rate_base2006 = 1290

Hardware
CPU Name: Intel Xeon Gold 6142
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 2600
FPU: Integrated
CPU(s) enabled: 32 cores, 2 chips, 16 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

Continued on next page

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

Continued on next page

SPEC CFP2006 Result

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Gold 6142)

$SPECfp\_rate2006 =$ Not Run

$SPECfp\_rate\_base2006 =$ 1290

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

L3 Cache:	22 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	Not Applicable
Memory:	192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)	Other Software:	None
Disk Subsystem:	1 x 480 GB SATA SSD, RAID 0		
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	64	863	1010	**863**	**1010**	863	1010							
416.gamess	64	916	1370	918	1360	**917**	**1370**							
433.milc	64	590	997	**589**	**997**	589	997							
434.zeusmp	64	369	1580	**363**	**1600**	363	1610							
435.gromacs	64	263	1740	266	1720	**265**	**1730**							
436.cactusADM	64	445	1720	**444**	**1720**	443	1730							
437.leslie3d	64	806	746	**806**	**746**	806	747							
444.namd	64	454	1130	**452**	**1140**	451	1140							
447.dealII	64	336	2180	**337**	**2170**	339	2160							
450.soplex	64	708	754	708	754	**708**	**754**							
453.povray	64	180	1890	179	1900	**179**	**1900**							
454.calculix	64	251	2100	252	2100	**251**	**2100**							
459.GemsFDTD	64	**979**	**694**	979	694	979	693							
465.tonto	64	438	1440	446	1410	**441**	**1430**							
470.lbm	64	649	1360	**648**	**1360**	648	1360							
481.wrf	64	578	1240	**577**	**1240**	576	1240							
482.sphinx3	64	**1011**	**1230**	1005	1240	1013	1230							

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"

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Gold 6142)

$SPECfp_rate2006 = $ Not Run

$SPECfp_rate_base2006 = $ 1290

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

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

Operating System Notes (Continued)

```
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
 Sysinfo program /home/specuser/cpu2006/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on linux-0s5n Wed Nov  8 06:53:43 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 6142 CPU @ 2.60GHz
       2 "physical id"s (chips)
       64 "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 : 16
       siblings  : 32
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
    cache size : 22528 KB

 From /proc/meminfo
    MemTotal:       197550460 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"
```
Continued on next page

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Gold 6142)

$SPECfp\_rate2006 =$ Not Run

$SPECfp\_rate\_base2006 =$ 1290

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

Platform Notes (Continued)

```
        ID="sles"
        ANSI_COLOR="0;32"
        CPE_NAME="cpe:/o:suse:sles:12:sp2"

  uname -a:
     Linux linux-0s5n 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 Nov 8 01:38

  SPEC is set to: /home/specuser/cpu2006
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sdb3       xfs   407G  166G  242G  41% /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 U32 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 = "/home/specuser/cpu2006/lib/ia32:/home/specuser/cpu2006/lib/intel64:/home/specuser/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 -m64

C++ benchmarks:
    icpc -m64

Fortran benchmarks:
    ifort -m64

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

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Gold 6142)

$SPECfp_rate2006 = $ **Not Run**

$SPECfp_rate_base2006 = $ 1290

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

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
```

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-Platform-Flags-Intel-V1.2-SKX-revF.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-revF.xml

SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.60 GHz, Intel Xeon Gold 6142)

$SPECfp\_rate2006 =$ Not Run

$SPECfp\_rate\_base2006 =$ 1290

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

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

SPEC and SPECfp 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 29 12:30:18 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 29 November 2017.