SPEC® CFP2006 Result

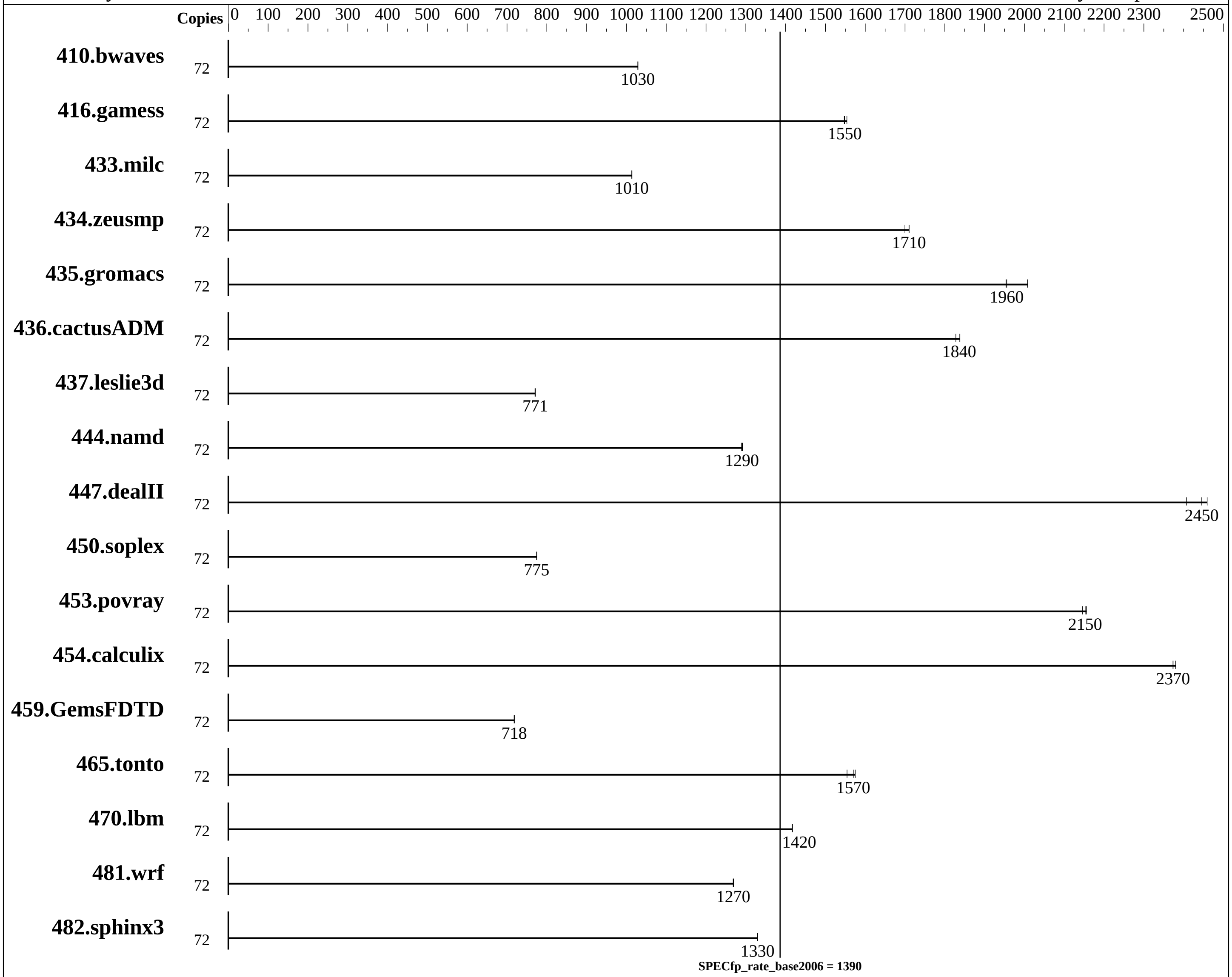
Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL360 Gen10
(2.70 GHz, Intel Xeon Gold 6150)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 1390

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



Hardware

CPU Name:	Intel Xeon Gold 6150
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	36 cores, 2 chips, 18 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

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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)

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L3 Cache: 24.75 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 480 GB SATA SSD, RAID 0
Other Hardware: None

Base Pointers: 32/64-bit
Peak Pointers: Not Applicable
Other Software: None

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	72	951	1030	951	1030	**951**	**1030**							
416.gamess	72	907	1550	911	1550	**910**	**1550**							
433.milc	72	652	1010	652	1010	**652**	**1010**							
434.zeusmp	72	385	1700	**383**	**1710**	383	1710							
435.gromacs	72	263	1950	**263**	**1960**	256	2010							
436.cactusADM	72	471	1830	468	1840	**469**	**1840**							
437.leslie3d	72	877	771	879	770	**878**	**771**							
444.namd	72	447	1290	**447**	**1290**	448	1290							
447.dealII	72	335	2460	342	2410	**337**	**2450**							
450.soplex	72	**775**	**775**	775	774	775	775							
453.povray	72	**178**	**2150**	179	2150	178	2160							
454.calculix	72	250	2380	**250**	**2370**	250	2370							
459.GemsFDTD	72	1064	718	**1063**	**718**	1063	719							
465.tonto	72	450	1570	**451**	**1570**	456	1550							
470.lbm	72	698	1420	**698**	**1420**	698	1420							
481.wrf	72	633	1270	634	1270	**634**	**1270**							
482.sphinx3	72	**1056**	**1330**	1056	1330	1055	1330							

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"
```

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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
 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

Sysinfo program /home/specuser/cpu2006/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-lvuc Sun Oct 22 06:15:06 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 6150 CPU @ 2.70GHz
      2 "physical id"s (chips)
      72 "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 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 8 9 10 11 16 17 18 19 20 24 25 26 27
   cache size : 25344 KB

From /proc/meminfo
   MemTotal:       197548380 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"
```

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Platform Notes (Continued)

```
        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 linux-lvuc 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 Oct 22 05:57

  SPEC is set to: /home/specuser/cpu2006
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda4      xfs   405G  241G  165G  60% /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

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-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

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

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