SPEC® CFP2006 Result

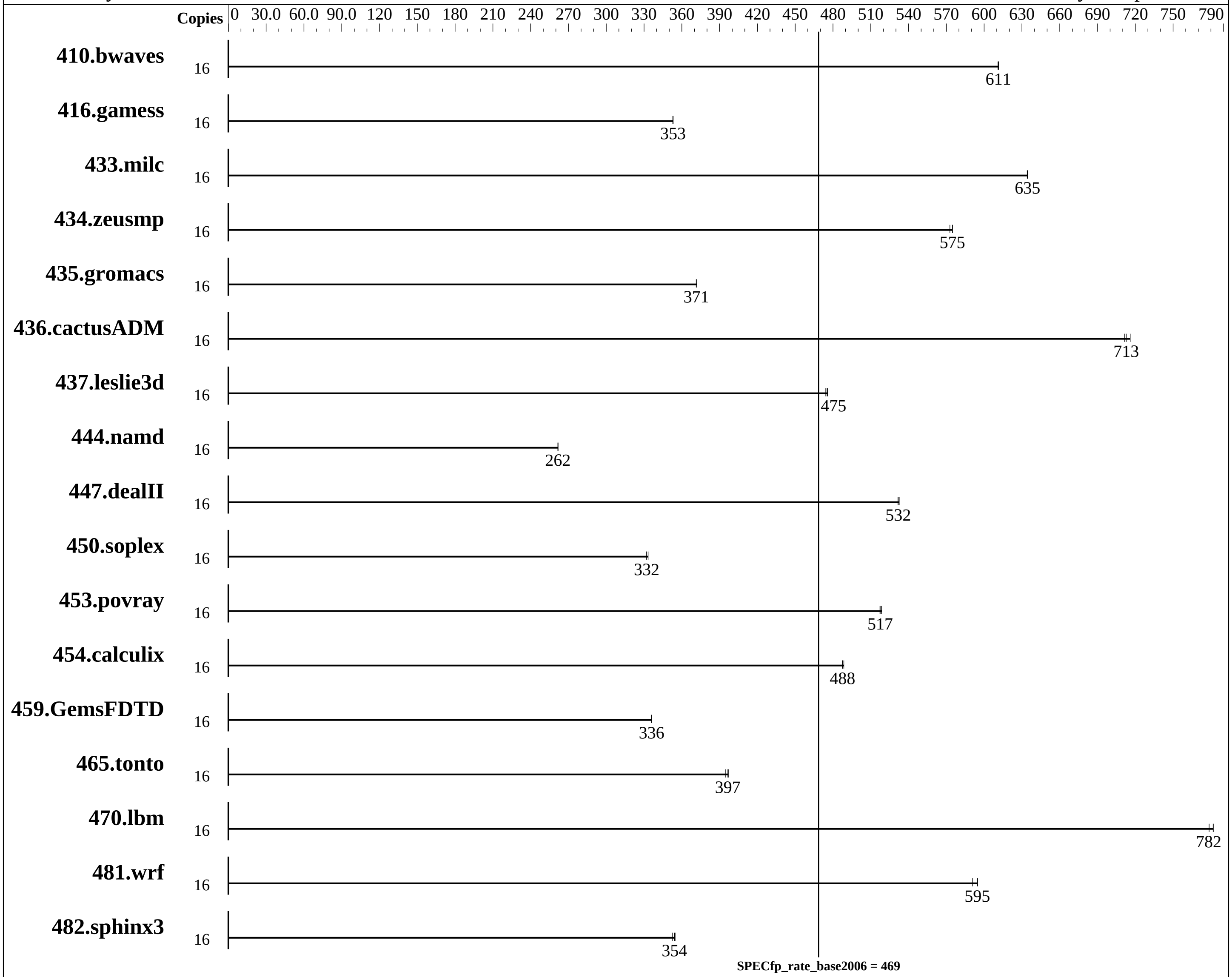
Hewlett Packard Enterprise
(Test Sponsor: HPE)

Synergy 480 Gen10
(1.70 GHz, Intel Xeon Bronze 3106)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 469

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



Hardware

CPU Name:	Intel Xeon Bronze 3106
CPU Characteristics:	
CPU MHz:	1700
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
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)

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L3 Cache: 11 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2133)
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

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	356	611	356	611	**356**	**611**							
416.gamess	16	**887**	**353**	887	353	888	353							
433.milc	16	232	634	231	635	**231**	**635**							
434.zeusmp	16	254	573	**253**	**575**	253	575							
435.gromacs	16	308	371	307	372	**308**	**371**							
436.cactusADM	16	**268**	**713**	267	716	269	711							
437.leslie3d	16	316	476	317	474	**316**	**475**							
444.namd	16	**490**	**262**	490	262	491	262							
447.dealII	16	344	532	344	533	**344**	**532**							
450.soplex	16	400	333	**402**	**332**	402	332							
453.povray	16	**164**	**517**	164	519	165	517							
454.calculix	16	270	489	**271**	**488**	271	487							
459.GemsFDTD	16	505	336	**505**	**336**	505	336							
465.tonto	16	397	397	**397**	**397**	399	395							
470.lbm	16	282	779	281	782	**281**	**782**							
481.wrf	16	302	591	**301**	**595**	300	595							
482.sphinx3	16	884	353	879	355	**881**	**354**							

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"
```

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Operating System Notes (Continued)

```
tuned profile set wtih "tuned-adm profile throughput-performance"
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 State
 Workload Profile set to Custom
  Sub-NUMA Clustering set to Disabled
 Sysinfo program /home/cpu2006/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on sy480_m3_sles Sat Dec  9 05:08:01 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) Bronze 3106 CPU @ 1.70GHz
       2 "physical id"s (chips)
       16 "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 : 8
       siblings  : 8
       physical 0: cores 0 1 2 3 4 5 6 7
       physical 1: cores 0 1 2 3 4 5 6 7
    cache size : 11264 KB

 From /proc/meminfo
    MemTotal:       395932480 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"
```

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Platform Notes (Continued)

```
        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"

  uname -a:
     Linux sy480_m3_sles 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 Dec 9 05:06

  SPEC is set to: /home/cpu2006
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda4      xfs   405G   70G  336G  18% /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 I42 11/14/2017
    Memory:
     24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz, configured at 2133 MHz

  (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/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`

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Base Compiler Invocation (Continued)

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-revH.html

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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-revH.xml

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

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