SPEC® CFP2006 Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10
(3.50 GHz, Intel Xeon Gold 6144)

$SPECfp^{®}2006 =$ **Not Run**

$SPECfp\_base2006 =$ **151**

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

Benchmark	Result
410.bwaves	1070
416.gamess	54.6
433.milc	91.7
434.zeusmp	278
435.gromacs	67.6
436.cactusADM	978
437.leslie3d	503
444.namd	40.4
447.dealII	80.9
450.soplex	56.6
453.povray	78.7
454.calculix	78.4
459.GemsFDTD	275
465.tonto	61.6
470.lbm	957
481.wrf	142
482.sphinx3	83.9

SPECfp_base2006 = 151

Hardware

CPU Name:	Intel Xeon Gold 6144
CPU Characteristics:	Intel Turbo Boost Technology up to 4.20 GHz
CPU MHz:	3500
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:	Red Hat Enterprise Linux Server release 7.3 (Maipo) Kernel 3.10.0-514.el7.x86_64
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:	Yes
File System:	xfs

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL380 Gen10
(3.50 GHz, Intel Xeon Gold 6144)

$SPECfp2006 =$ **Not Run**
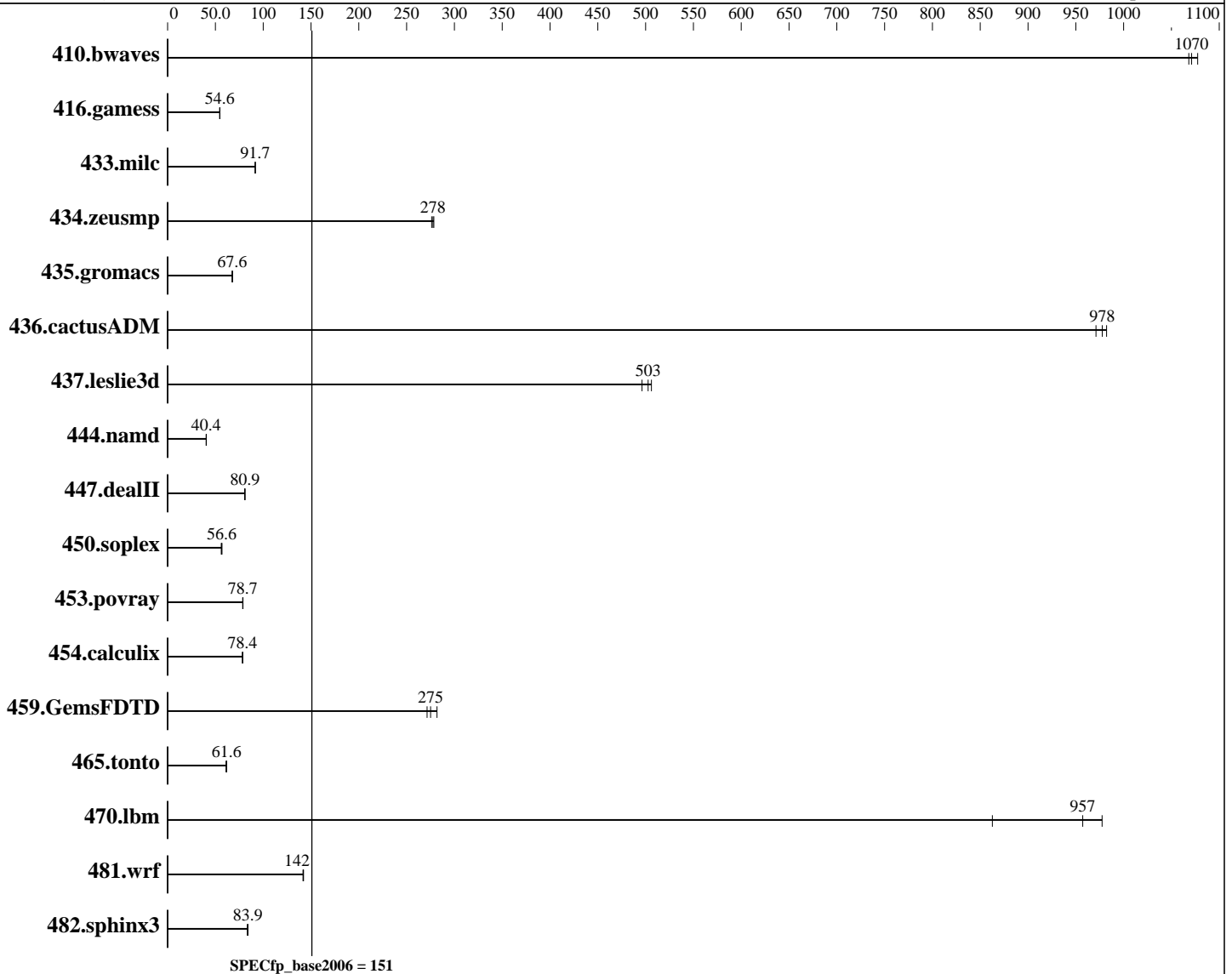
$SPECfp\_base2006 =$ **151**

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

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

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 960 GB SATA SSD, RAID 0
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other Software:	None

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	**12.7**	**1070**	12.6	1080	12.7	1070						
416.gamess	358	54.6	359	54.6	**359**	**54.6**						
433.milc	100	91.7	100	91.6	**100**	**91.7**						
434.zeusmp	32.9	276	32.7	278	**32.8**	**278**						
435.gromacs	105	67.9	**106**	**67.6**	106	67.5						
436.cactusADM	12.3	971	12.2	982	**12.2**	**978**						
437.leslie3d	18.6	506	**18.7**	**503**	18.9	496						
444.namd	**198**	**40.4**	199	40.4	198	40.4						
447.dealII	**141**	**80.9**	142	80.6	141	81.0						
450.soplex	**147**	**56.6**	147	56.8	149	56.1						
453.povray	**67.6**	**78.7**	67.7	78.6	67.5	78.8						
454.calculix	105	78.6	**105**	**78.4**	105	78.2						
459.GemsFDTD	**38.6**	**275**	39.1	271	37.7	282						
465.tonto	159	61.8	161	61.1	**160**	**61.6**						
470.lbm	**14.4**	**957**	14.1	977	15.9	863						
481.wrf	78.8	142	**78.8**	**142**	78.6	142						
482.sphinx3	232	84.1	234	83.3	**232**	**83.9**						

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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
IRQ balance service was stop using "service irqbalance stop"
Tuned-adm profile was set to Throughput-Performance
```

Platform Notes

```
BIOS Configuration:
 Intel Hyperthreading set to Disabled
 Thermal Configuration set to Maximum Cooling
 LLC Prefetcher set to Enabled
 LLC Dead Line Allocation set to Disabled
```

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10
(3.50 GHz, Intel Xeon Gold 6144)

$SPECfp2006 = $ **Not Run**

$SPECfp_base2006 = $ **151**

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

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

Platform Notes (Continued)

```
    Stale A to S set to Disabled
    Memory Patrol Scrubbing set to disabled
    Workload Profile set to General Peak Frequency Compute
     Energy/Performance Bias set to Maximum Performance
    Workload Profile set to Custom
     NUMA Group Size Optimization set to Flat
    Sysinfo program /home/cpu2006/config/sysinfo.rev6993
    Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
    running on DL380Gen10 Thu Nov  9 02:32:46 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 6144 CPU @ 3.50GHz
          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 2 3 9 16 19 26 27
          physical 1: cores 0 2 3 9 16 19 26 27
       cache size : 25344 KB

    From /proc/meminfo
       MemTotal:       197574316 kB
       HugePages_Total:        0
       Hugepagesize:       2048 kB

    From /etc/*release* /etc/*version*
       os-release:
          NAME="Red Hat Enterprise Linux Server"
          VERSION="7.3 (Maipo)"
          ID="rhel"
          ID_LIKE="fedora"
          VERSION_ID="7.3"
          PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
          ANSI_COLOR="0;31"
          CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
       redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
       system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
       system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

    uname -a:
       Linux DL380Gen10 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
       x86_64 x86_64 x86_64 GNU/Linux

    run-level 3 Nov 9 02:31
```

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10
(3.50 GHz, Intel Xeon Gold 6144)

$SPECfp2006 = $ **Not Run**

$SPECfp_base2006 = $ **151**

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

Platform Notes (Continued)

```
  SPEC is set to: /home/cpu2006
    Filesystem           Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   839G   31G  808G   4% /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 U30 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:
KMP_AFFINITY = "granularity=core,compact"
LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"
OMP_NUM_THREADS = "16"

 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
```

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10
(3.50 GHz, Intel Xeon Gold 6144)

$SPECfp2006 =$ **Not Run**

$SPECfp\_base2006 =$ **151**

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

Base Portability Flags (Continued)

```
    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 -parallel -qopt-prefetch
```

C++ benchmarks:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
```

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

Benchmarks using both Fortran and C:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
```

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

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.