



SPEC[®] CFP2006 Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

Synergy 480 Gen10
(2.70 GHz, Intel Xeon Gold 6150)

SPECfp[®]2006 = Not Run

SPECfp_base2006 = 144

CPU2006 license: 3

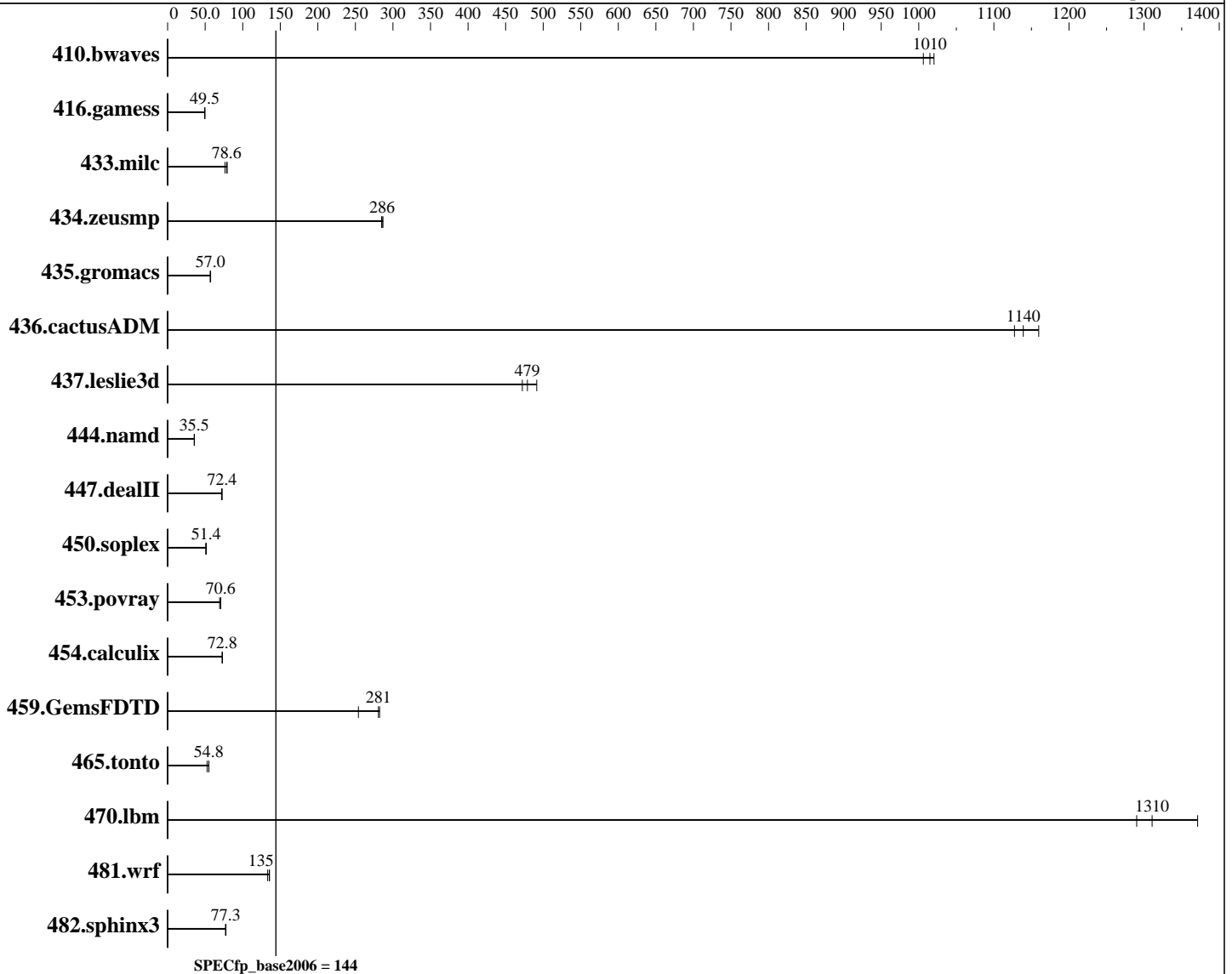
Test sponsor: HPE

Tested by: HPE

Test date: Nov-2017

Hardware Availability: Oct-2017

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
 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: Yes
 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: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 960 GB SATA SSD, RAID 0
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other Software: none

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>13.4</u>	<u>1010</u>	13.3	1020	13.5	1010						
416.gamess	<u>395</u>	<u>49.5</u>	395	49.5	396	49.5						
433.milc	<u>117</u>	<u>78.6</u>	116	79.3	120	76.3						
434.zeusmp	<u>31.9</u>	<u>286</u>	31.9	285	31.7	287						
435.gromacs	126	56.8	125	57.3	<u>125</u>	<u>57.0</u>						
436.cactusADM	10.6	1130	10.3	1160	<u>10.5</u>	<u>1140</u>						
437.leslie3d	19.1	491	19.9	472	<u>19.6</u>	<u>479</u>						
444.namd	<u>226</u>	<u>35.5</u>	225	35.6	226	35.5						
447.dealII	<u>158</u>	<u>72.4</u>	159	71.8	158	72.5						
450.soplex	162	51.6	<u>162</u>	<u>51.4</u>	164	50.7						
453.povray	76.8	69.3	<u>75.3</u>	<u>70.6</u>	75.3	70.7						
454.calculix	113	73.0	<u>113</u>	<u>72.8</u>	114	72.6						
459.GemsFDTD	41.8	254	<u>37.8</u>	<u>281</u>	37.6	282						
465.tonto	<u>180</u>	<u>54.8</u>	179	55.0	187	52.6						
470.lbm	10.7	1290	<u>10.5</u>	<u>1310</u>	10.0	1370						
481.wrf	<u>82.5</u>	<u>135</u>	82.3	136	83.9	133						
482.sphinx3	<u>252</u>	<u>77.3</u>	252	77.2	251	77.7						

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 Prefetch set to Enabled
LLC Dead Line Allocation set to Disabled

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Platform Notes (Continued)

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 linux-vjuij Mon Nov 6 11:49:18 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)
 36 "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  : 18
  physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 25344 KB
```

```
From /proc/meminfo
MemTotal:      395928244 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2
```

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

uname -a:

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Platform Notes (Continued)

```
Linux linux-vj 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 6 09:31
```

```
SPEC is set to: /home/cpu2006
```

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4       xfs   852G   76G  777G   9% /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 09/27/2017
```

```
Memory:
```

```
24x UNKNOWN NOT AVAILABLE 16 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 = "36"
```

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
```



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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.lelie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deallI: -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>



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

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