



SPEC® CFP2006 Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

Superdome Flex
(2.50 GHz, Intel Xeon Platinum 8180)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 24600

CPU2006 license: 3

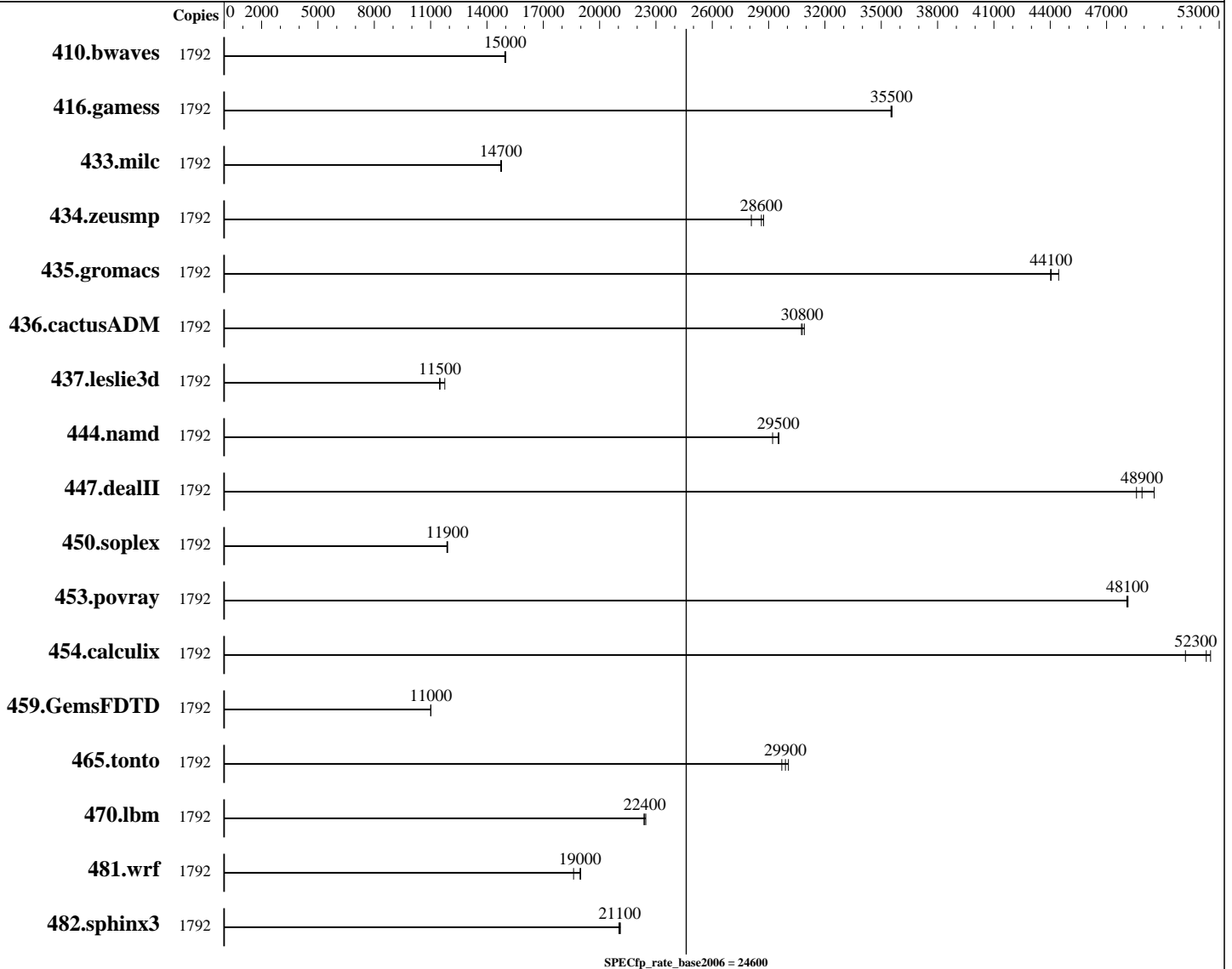
Test sponsor: HPE

Tested by: HPE

Test date: Dec-2017

Hardware Availability: Mar-2018

Software Availability: Mar-2018



Hardware

CPU Name: Intel Xeon Platinum 8180
CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz: 2500
FPU: Integrated
CPU(s) enabled: 896 cores, 32 chips, 28 cores/chip, 2 threads/core
CPU(s) orderable: 4 to 32 chips
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) SP3, Kernel 4.4.92-6.18-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: tmpfs
System State: Run level 3 (multi-user)

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L3 Cache: 38.5 MB I+D on chip per chip
Other Cache: None
Memory: 24 TB (384 x 64 GB 4Rx4 PC4-2666V-L)
Disk Subsystem: 24 TB tmpfs
Other Hardware: None

Base Pointers: 32/64-bit
Peak Pointers: Not Applicable
Other Software: HPE Foundation Software 1.0,
Build 717a130.sles12sp3-1710052000

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	1792	1629	15000	1624	15000	1626	15000							
416.gamess	1792	987	35500	986	35600	988	35500							
433.milc	1792	1116	14700	1116	14700	1113	14800							
434.zeusmp	1792	570	28600	581	28100	568	28700							
435.gromacs	1792	291	44000	290	44100	288	44400							
436.cactusADM	1792	696	30800	696	30800	693	30900							
437.leslie3d	1792	1468	11500	1464	11500	1433	11800							
444.namd	1792	487	29500	486	29600	492	29200							
447.dealII	1792	419	48900	414	49500	422	48600							
450.soplex	1792	1259	11900	1256	11900	1256	11900							
453.povray	1792	198	48100	198	48100	198	48100							
454.calculix	1792	289	51200	281	52500	283	52300							
459.GemsFDTD	1792	1727	11000	1727	11000	1727	11000							
465.tonto	1792	590	29900	587	30100	594	29700							
470.lbm	1792	1099	22400	1101	22400	1096	22500							
481.wrf	1792	1075	18600	1054	19000	1056	19000							
482.sphinx3	1792	1661	21000	1657	21100	1655	21100							

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 with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
The tmpfs filesystem was set up with:
mkdir -p /dev/shm/cpu2006-32S
mount -t tmpfs -o size=24576G,rw tmpfs /dev/shm/cpu2006-32S



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Platform Notes

Rack Management Controller setting:
modify npar pnum=0 ras=hpc

Sysinfo program /dev/shm/cpu2006-32S/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on uv4test33-sys Mon Dec 18 03:36:10 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) Platinum 8180 CPU @ 2.50GHz
 32 "physical id"s (chips)
 1792 "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      : 28
siblings       : 56
physical 0:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 1:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 2:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 3:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 4:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 5:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 6:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 7:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 8:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 9:    : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
25 26 27 28 29 30
physical 10:   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 11:   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 12:   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 13:   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 14:   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 15:   : cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30

```

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Platform Notes (Continued)

```

physical 16: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 17: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 18: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 19: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 20: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 21: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 22: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 23: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 24: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 25: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 26: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 27: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 28: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 29: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 30: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
physical 31: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22
24 25 26 27 28 29 30
cache size : 39424 KB

```

From /proc/meminfo

MemTotal: 24592336740 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

SUSE Linux Enterprise Server 12 SP3

From /etc/*release* /etc/*version*

SuSE-release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

PATCHLEVEL = 3

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.

hpe-foundation-release: HPE Foundation Software 1.0, Build

717a130.sles12sp3-1710052000

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Platform Notes (Continued)

```

os-release:
  NAME="SLES"
  VERSION="12-SP3"
  VERSION_ID="12.3"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp3"

```

```

uname -a:
Linux uv4test33-sys 4.4.92-6.18-default #1 SMP Fri Oct 20 18:58:48 UTC 2017
(a69df70) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Dec 17 19:05

```

SPEC is set to: /dev/shm/cpu2006-32S
Filesystem      Type      Size  Used Avail Use% Mounted on
tmpfs           tmpfs     24T   754G  24T   4% /dev/shm/cpu2006-32S

```

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 IP147.006.000.143.000.1712051837 12/05/2017

Memory:

384x Samsung M386A8K40BM2-CTD 64 GB 4 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 = "/dev/shm/cpu2006-32S/lib/ia32:/dev/shm/cpu2006-32S/lib/intel64:/dev/shm/cpu2006-32S/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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info@spec.org

http://www.spec.org/

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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-Superdome_Flex-RevA.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-Superdome_Flex-RevA.xml

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For other inquiries, please contact webmaster@spec.org.

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