



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp®2006 = 115

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = 108

CPU2006 license: 3

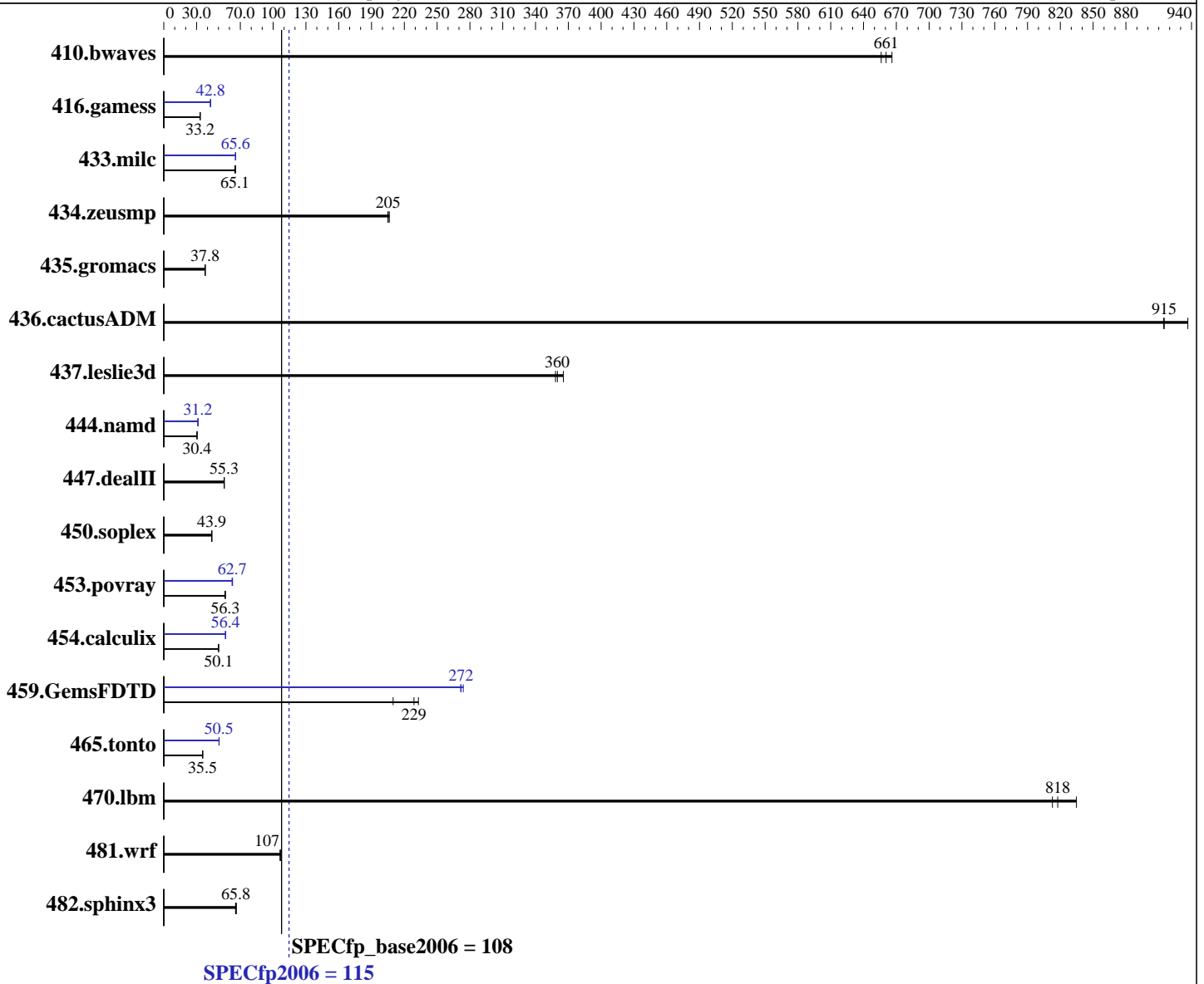
Test date: Oct-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014



Hardware	
CPU Name:	Intel Xeon E5-2698 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	32 cores, 2 chips, 16 cores/chip
CPU(s) orderable:	1,2 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Software	
Operating System:	Red Hat Enterprise Linux Server release 7.0 (Maipo) Kernel 3.10.0-123.el7.x86_64
Compiler:	C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux; Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

Continued on next page

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = **115**

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = **108**

CPU2006 license: 3

Test date: Oct-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

L3 Cache: 40 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	20.7	656	20.4	666	<u>20.6</u>	<u>661</u>	20.7	656	20.4	666	<u>20.6</u>	<u>661</u>
416.gamess	589	33.2	<u>589</u>	<u>33.2</u>	588	33.3	457	42.8	460	42.6	<u>458</u>	<u>42.8</u>
433.milc	140	65.7	<u>141</u>	<u>65.1</u>	141	65.0	140	65.7	140	65.6	<u>140</u>	<u>65.6</u>
434.zeusmp	<u>44.3</u>	<u>205</u>	44.1	206	44.4	205	<u>44.3</u>	<u>205</u>	44.1	206	44.4	205
435.gromacs	<u>189</u>	<u>37.8</u>	189	37.8	188	37.9	<u>189</u>	<u>37.8</u>	189	37.8	188	37.9
436.cactusADM	12.8	937	13.1	914	<u>13.1</u>	<u>915</u>	12.8	937	13.1	914	<u>13.1</u>	<u>915</u>
437.leslie3d	<u>26.1</u>	<u>360</u>	26.2	358	25.7	365	<u>26.1</u>	<u>360</u>	26.2	358	25.7	365
444.namd	264	30.4	264	30.4	<u>264</u>	<u>30.4</u>	<u>257</u>	<u>31.2</u>	257	31.2	257	31.2
447.dealII	<u>207</u>	<u>55.3</u>	207	55.2	207	55.3	<u>207</u>	<u>55.3</u>	207	55.2	207	55.3
450.soplex	190	43.8	190	43.9	<u>190</u>	<u>43.9</u>	190	43.8	190	43.9	<u>190</u>	<u>43.9</u>
453.povray	94.5	56.3	95.1	55.9	<u>94.5</u>	<u>56.3</u>	84.6	62.9	85.2	62.4	<u>84.8</u>	<u>62.7</u>
454.calculix	164	50.2	165	49.9	<u>165</u>	<u>50.1</u>	146	56.5	146	56.4	<u>146</u>	<u>56.4</u>
459.GemsFDTD	<u>46.4</u>	<u>229</u>	50.6	210	45.6	233	38.7	274	<u>39.0</u>	<u>272</u>	39.1	272
465.tonto	276	35.6	277	35.5	<u>277</u>	<u>35.5</u>	194	50.7	195	50.5	<u>195</u>	<u>50.5</u>
470.lbm	<u>16.8</u>	<u>818</u>	16.5	835	16.9	813	<u>16.8</u>	<u>818</u>	16.5	835	16.9	813
481.wrf	105	106	104	107	<u>105</u>	<u>107</u>	105	106	104	107	<u>105</u>	<u>107</u>
482.sphinx3	293	66.4	297	65.6	<u>296</u>	<u>65.8</u>	293	66.4	297	65.6	<u>296</u>	<u>65.8</u>

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 with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

Platform Notes

BIOS Configuration:
HP Power Profile set to Custom
HP Power Regulator to HP Static High Performance Mode
Minimum Processor Idle Power Core State set to C6 State
Minimum Processor Idle Power Package State set to No Package State
QPI Snoop Configuration set to Home Snoop
Thermal Configuration set to Maximum Cooling
Collaborative Power Control set to Disabled

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 115

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = 108

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Oct-2014
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Platform Notes (Continued)

Processor Power and Utilization Monitoring set to Disabled
Memory Double Refresh Rate set to 1x Refresh
Intel Hyperthreading Options set to Disabled

Sysinfo program /home/cpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb8667b5a285932ceab81e28219e1
running on R110DL380gen9 Fri Oct 24 04:40:35 2014

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) CPU E5-2698 v3 @ 2.30GHz
 2 "physical id"s (chips)
 32 "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 : 16
  siblings  : 16
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB
```

```
From /proc/meminfo
MemTotal:      263844964 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

```
uname -a:
Linux R110DL380gen9 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Oct 24 04:20

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 115

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = 108

CPU2006 license: 3

Test date: Oct-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Platform Notes (Continued)

/dev/sda5 ext4 362G 15G 329G 5% /
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 HP P89 07/11/2014

Memory:

16x HP 752369-081 16 GB 2 rank 2133 MHz
8x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 256 GB and the dmidecode description should have one line reading as:
16x HP 752369-081 16 GB 2 rank 2133 MHz

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact"

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP_NUM_THREADS = "32"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 115

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = 108

CPU2006 license: 3

Test date: Oct-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Base Portability Flags (Continued)

```

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 -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

```

Peak Compiler Invocation

```

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 115

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = 108

CPU2006 license: 3

Test date: Oct-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 115

ProLiant DL380 Gen9
(2.30 GHz, Intel Xeon E5-2698 v3)

SPECfp_base2006 = 108

CPU2006 license: 3

Test date: Oct-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 Tue Nov 18 16:34:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 18 November 2014.