SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

$SPECfp®2006 =$ 118

$SPECfp\_base2006 =$ 113

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

Test date: Jul-2014
Hardware Availability: Sep-2014
Software Availability: Jun-2014

Benchmark	base	peak
410.bwaves	548	
416.gamess	40.4	45.4
433.milc	73.5	73.7
434.zeusmp	212	
435.gromacs	50.0	
436.cactusADM	781	
437.leslie3d	361	
444.namd	28.2	29.1
447.dealII	61.2	
450.soplex	42.8	
453.povray	59.9	66.5
454.calculix	50.4	56.5
459.GemsFDTD	220	262
465.tonto	46.9	55.0
470.lbm	694	
481.wrf	117	
482.sphinx3	84.7	

SPECfp_base2006 = 113
SPECfp2006 = 118

Hardware

CPU Name:	Intel Xeon E5-2667 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 7.0 (Maipo) Kernel 3.10.0-123.el7.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux; Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	xfs

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

SPECfp2006 =   118

SPECfp_base2006 =   113

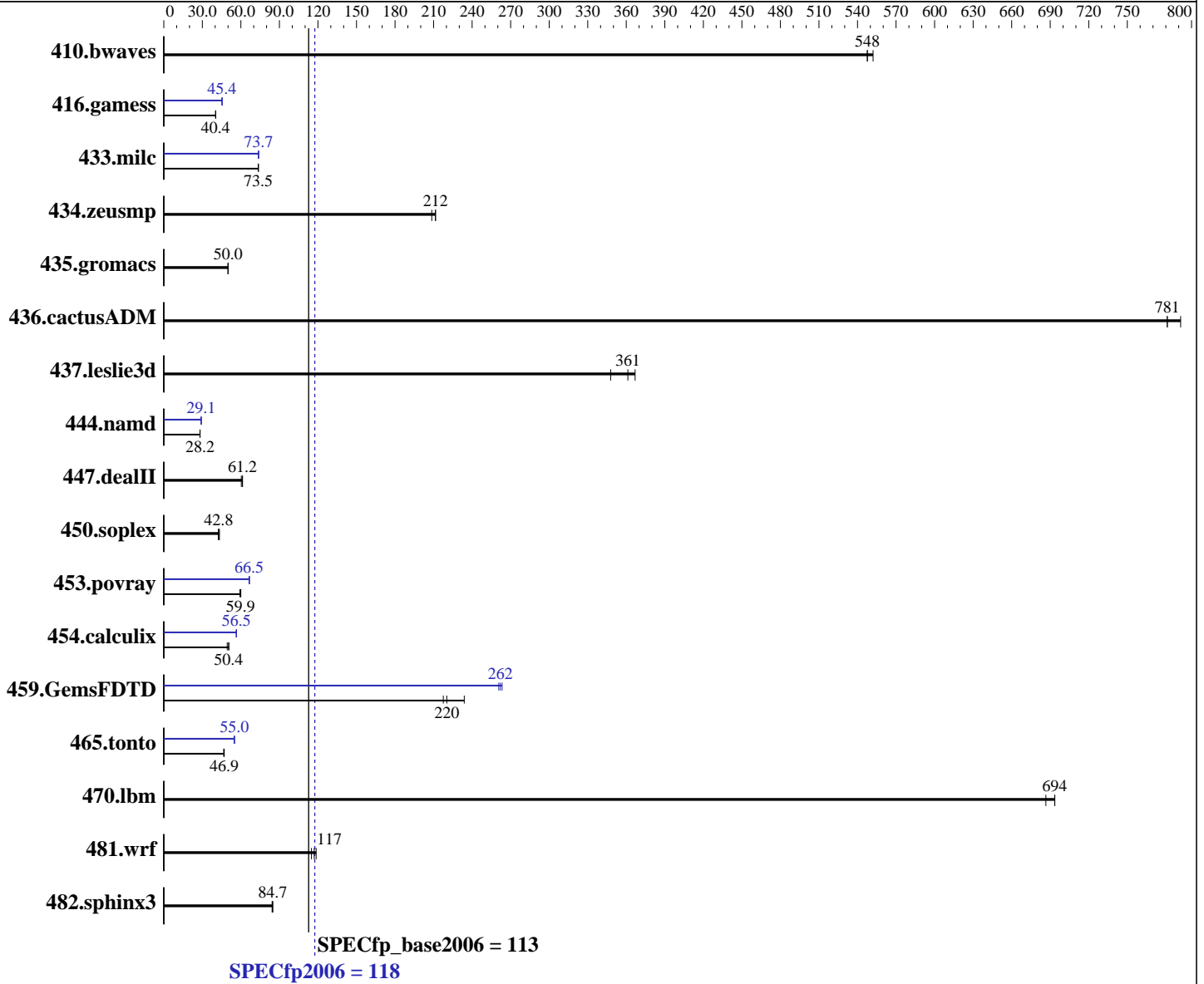|	
CPU2006 license: 3	**Test date:** Jul-2014
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Sep-2014
Tested by: Hewlett-Packard Company	**Software Availability:** Jun-2014

L3 Cache:	20 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 400 GB SAS SSD, RAID 0	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	**24.8**	**548**	24.8	548	24.6	552	**24.8**	**548**	24.8	548	24.6	552
416.gamess	486	40.3	484	40.5	**485**	**40.4**	**431**	**45.4**	432	45.3	431	45.4
433.milc	125	73.7	**125**	**73.5**	125	73.5	124	73.9	**124**	**73.7**	125	73.6
434.zeusmp	43.6	209	**43.0**	**212**	43.0	212	43.6	209	**43.0**	**212**	43.0	212
435.gromacs	143	50.0	**143**	**50.0**	142	50.1	143	50.0	**143**	**50.0**	142	50.1
436.cactusADM	**15.3**	**781**	15.1	792	15.3	781	**15.3**	**781**	15.1	792	15.3	781
437.leslie3d	**26.0**	**361**	27.0	348	25.6	367	**26.0**	**361**	27.0	348	25.6	367
444.namd	284	28.2	285	28.2	**284**	**28.2**	**276**	**29.1**	275	29.1	276	29.1
447.dealII	**187**	**61.2**	187	61.2	190	60.3	**187**	**61.2**	187	61.2	190	60.3
450.soplex	193	43.3	**195**	**42.8**	197	42.4	193	43.3	**195**	**42.8**	197	42.4
453.povray	**88.9**	**59.9**	89.8	59.3	88.7	60.0	**80.0**	**66.5**	80.1	66.5	79.7	66.7
454.calculix	**164**	**50.4**	167	49.3	163	50.7	**146**	**56.5**	146	56.5	146	56.4
459.GemsFDTD	45.4	234	48.8	218	**48.2**	**220**	**40.5**	**262**	40.3	263	40.7	261
465.tonto	211	46.6	209	47.1	**210**	**46.9**	179	54.9	**179**	**55.0**	179	55.0
470.lbm	**19.8**	**694**	19.8	694	20.0	687	**19.8**	**694**	19.8	694	20.0	687
481.wrf	94.2	119	**95.4**	**117**	97.2	115	94.2	119	**95.4**	**117**	97.2	115
482.sphinx3	230	84.8	231	84.3	**230**	**84.7**	230	84.8	231	84.3	**230**	**84.7**

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

Platform Notes

```
BIOS Configuration:
 Intel Hyperthreading set to Disabled
 HP Power Profile set to Maximum Performance
 Thermal Configuration set to Maximum Cooling
 Collaborative Power Control set to Disabled
 QPI Snoop Configuration set to Home Snoop
 Processor Power and Utlization Monitoring set to Disabled
 Memory Patrol Scrubbing set to Disabled
```

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

SPECfp2006 =　　118

SPECfp_base2006 =　　113

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

Test date: Jul-2014
Hardware Availability: Sep-2014
Software Availability: Jun-2014

Platform Notes (Continued)

```
Memory Refresh Rate set to 1x Refresh

Sysinfo program /home/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Mon Jul 21 11:46:40 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 E5-2667 v3 @ 3.20GHz
      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 : 20480 KB

From /proc/meminfo
   MemTotal:       263846844 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 localhost.localdomain 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 Jul 21 11:14

SPEC is set to: /home/cpu2006
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   318G  4.0G  314G   2% /home
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

$SPECfp2006 =$ 118

$SPECfp\_base2006 =$ 113

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

Test date: Jul-2014
Hardware Availability: Sep-2014
Software Availability: Jun-2014

Platform Notes (Continued)

```
  Additional information from dmidecode:
    BIOS HP P89 07/11/2014
    Memory:
     16x HP NOT AVAILABLE 16 GB 2133 MHz 2 rank
      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 NOT AVAILABLE 16 GB 2133 MHz 2 rank
```

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 = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
```

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
  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
```

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

$\text{SPECfp2006} =$ 118

$\text{SPECfp\_base2006} =$ 113

CPU2006 license: 3		**Test date:**	Jul-2014
Test sponsor:	Hewlett-Packard Company	**Hardware Availability:**	Sep-2014
Tested by:	Hewlett-Packard Company	**Software Availability:**	Jun-2014

Base Portability Flags (Continued)

```
    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
```

Peak Portability Flags

```
Same as Base Portability Flags
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

$\text{SPECfp2006} =$ 118

$\text{SPECfp\_base2006} =$ 113

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

Test date: Jul-2014
Hardware Availability: Sep-2014
Software Availability: Jun-2014

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.dealII: 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

Benchmarks using both Fortran and C:

> 435.gromacs: basepeak = yes

> 436.cactusADM: basepeak = yes

Hewlett-Packard Company

ProLiant DL360 Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

$SPECfp2006 =$ 118

$SPECfp\_base2006 =$ 113

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

Test date: Jul-2014
Hardware Availability: Sep-2014
Software Availability: Jun-2014

Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revA.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 Wed Sep 24 16:18:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 September 2014.