



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECfp<sup>®</sup>2006 = **106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

SPECfp\_base2006 = **101**

CPU2006 license: 3

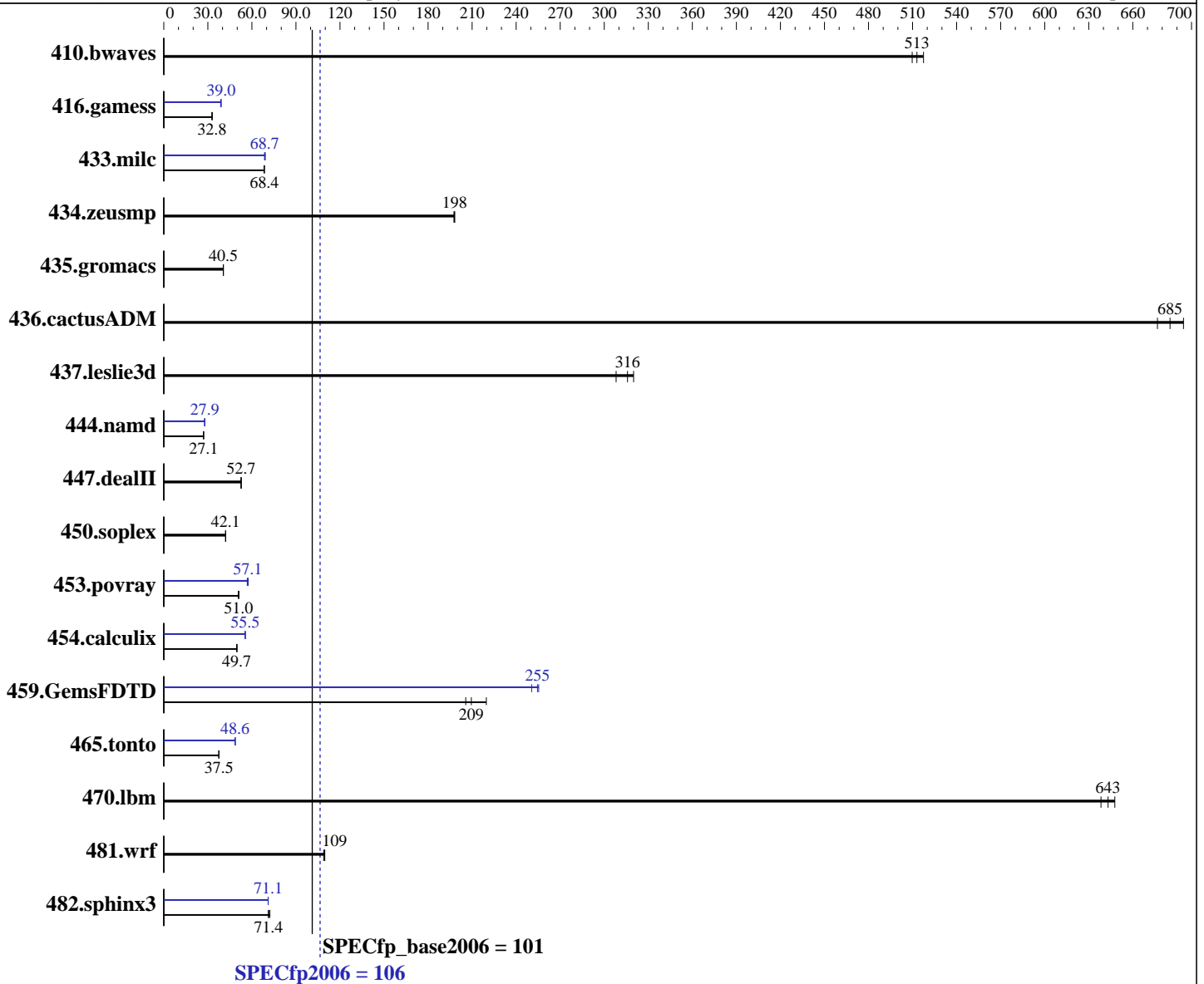
Test date: Dec-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2630 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2400  
 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 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: xfs

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECfp2006 = **106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

SPECfp\_base2006 = **101**

CPU2006 license: 3

Test date: Dec-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)  
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	26.7	510	26.3	517	<u>26.5</u>	<u>513</u>	26.7	510	26.3	517	<u>26.5</u>	<u>513</u>
416.gamess	<u>597</u>	<u>32.8</u>	597	32.8	593	33.0	<u>502</u>	<u>39.0</u>	502	39.0	505	38.8
433.milc	134	68.5	<u>134</u>	<u>68.4</u>	134	68.4	134	68.7	<u>134</u>	<u>68.7</u>	133	69.1
434.zeusmp	<u>46.0</u>	<u>198</u>	46.1	198	45.9	198	<u>46.0</u>	<u>198</u>	46.1	198	45.9	198
435.gromacs	176	40.6	176	40.5	<u>176</u>	<u>40.5</u>	176	40.6	176	40.5	<u>176</u>	<u>40.5</u>
436.cactusADM	17.7	677	<u>17.4</u>	<u>685</u>	17.2	695	17.7	677	<u>17.4</u>	<u>685</u>	17.2	695
437.leslie3d	30.5	308	29.4	320	<u>29.8</u>	<u>316</u>	30.5	308	29.4	320	<u>29.8</u>	<u>316</u>
444.namd	296	27.1	296	27.1	<u>296</u>	<u>27.1</u>	288	27.9	<u>288</u>	<u>27.9</u>	288	27.9
447.dealII	<u>217</u>	<u>52.7</u>	217	52.7	217	52.6	<u>217</u>	<u>52.7</u>	217	52.7	217	52.6
450.soplex	<u>198</u>	<u>42.1</u>	198	42.2	198	42.0	<u>198</u>	<u>42.1</u>	198	42.2	198	42.0
453.povray	<u>104</u>	<u>51.0</u>	105	50.8	104	51.1	<u>93.1</u>	<u>57.1</u>	92.5	57.5	93.6	56.8
454.calculix	166	49.7	165	49.9	<u>166</u>	<u>49.7</u>	<u>149</u>	<u>55.5</u>	149	55.4	149	55.5
459.GemsFDTD	<u>50.7</u>	<u>209</u>	48.3	220	51.6	206	42.3	251	41.6	255	<u>41.7</u>	<u>255</u>
465.tonto	<u>262</u>	<u>37.5</u>	262	37.6	263	37.4	<u>203</u>	<u>48.6</u>	202	48.7	203	48.6
470.lbm	21.5	638	21.2	648	<u>21.4</u>	<u>643</u>	21.5	638	21.2	648	<u>21.4</u>	<u>643</u>
481.wrf	103	109	<u>102</u>	<u>109</u>	102	110	103	109	<u>102</u>	<u>109</u>	102	110
482.sphinx3	<u>273</u>	<u>71.4</u>	270	72.2	274	71.2	274	71.1	274	71.0	<u>274</u>	<u>71.1</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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 2



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

**SPECfp2006 = 106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

**SPECfp\_base2006 = 101**

**CPU2006 license:** 3

**Test date:** Dec-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Sep-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Sep-2014

### Platform Notes (Continued)

Collaborative Power Control set to Disabled  
 Processor Power and Utilization Monitoring set to Disabled  
 Memory Double Refresh Rate set to 1x Refresh  
 Intel Hyperthreading Options set to Disabled  
 Sysinfo program /cpu2006/config/sysinfo.rev6914  
 \$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb8667b5a285932ceab81e28219e1  
 running on X-bl460c\_gen9-VP2.1 Wed Dec 17 10:18:35 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 E5-2630 v3 @ 2.40GHz
 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:      263846220 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 X-bl460c_gen9-VP2.1 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 Dec 17 10:14

SPEC is set to: /cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
Continued on next page						



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

**SPECfp\_base2006 = 101**

**CPU2006 license:** 3

**Test date:** Dec-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Sep-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Sep-2014

## Platform Notes (Continued)

/dev/sda4 xfs 277G 96G 182G 35% /  
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 I36 08/26/2014

Memory:

9x HP 752369-081 16 GB 2 rank 2133 MHz, configured at 1866 MHz

7x HP NOT AVAILABLE 16 GB 2 rank 2133 MHz, configured at 1866 MHz

(End of data from sysinfo program)

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact"

LD\_LIBRARY\_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"

OMP\_NUM\_THREADS = "16"

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

433.milc: -DSPEC\_CPU\_LP64

434.zeusmp: -DSPEC\_CPU\_LP64

435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

**SPECfp\_base2006 = 101**

**CPU2006 license:** 3

**Test date:** Dec-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Sep-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Sep-2014

## Base Portability Flags (Continued)

```

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 2006-2015 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

**SPECfp\_base2006 = 101**

**CPU2006 license:** 3

**Test date:** Dec-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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 106**

ProLiant BL460c Gen9  
(2.40 GHz, Intel Xeon E5-2630 v3)

**SPECfp\_base2006 = 101**

**CPU2006 license:** 3

**Test date:** Dec-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-revD.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-revD.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Jan 27 13:34:27 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 27 January 2015.