SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

$SPECfp^®_rate2006 = $ 564

$SPECfp_rate_base2006 = $ 564

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

	Copies	
410.bwaves	32	499
416.gamess	32	557
433.milc	32	484
434.zeusmp	32	660
435.gromacs	32	655
436.cactusADM	32	777
437.leslie3d	32	348
444.namd	32	444
447.dealII	32	870
450.soplex	32	349
453.povray	32	774
454.calculix	32	863
459.GemsFDTD	32	336
465.tonto	32	601
470.lbm	32	659
481.wrf	32	584
482.sphinx3	32	544

(Scale: 0 30.0 70.0 100 130 160 190 220 250 280 310 340 370 400 430 460 490 520 550 580 610 640 670 700 730 760 790 820 880)

SPECfp_rate_base2006 = 564

SPECfp_rate2006 = 564

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, 2 threads/core

CPU(s) orderable: 1,2 chips

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: No

File System: xfs

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

$SPECfp_rate2006 = $ 564

$SPECfp_rate_base2006 = $ 564

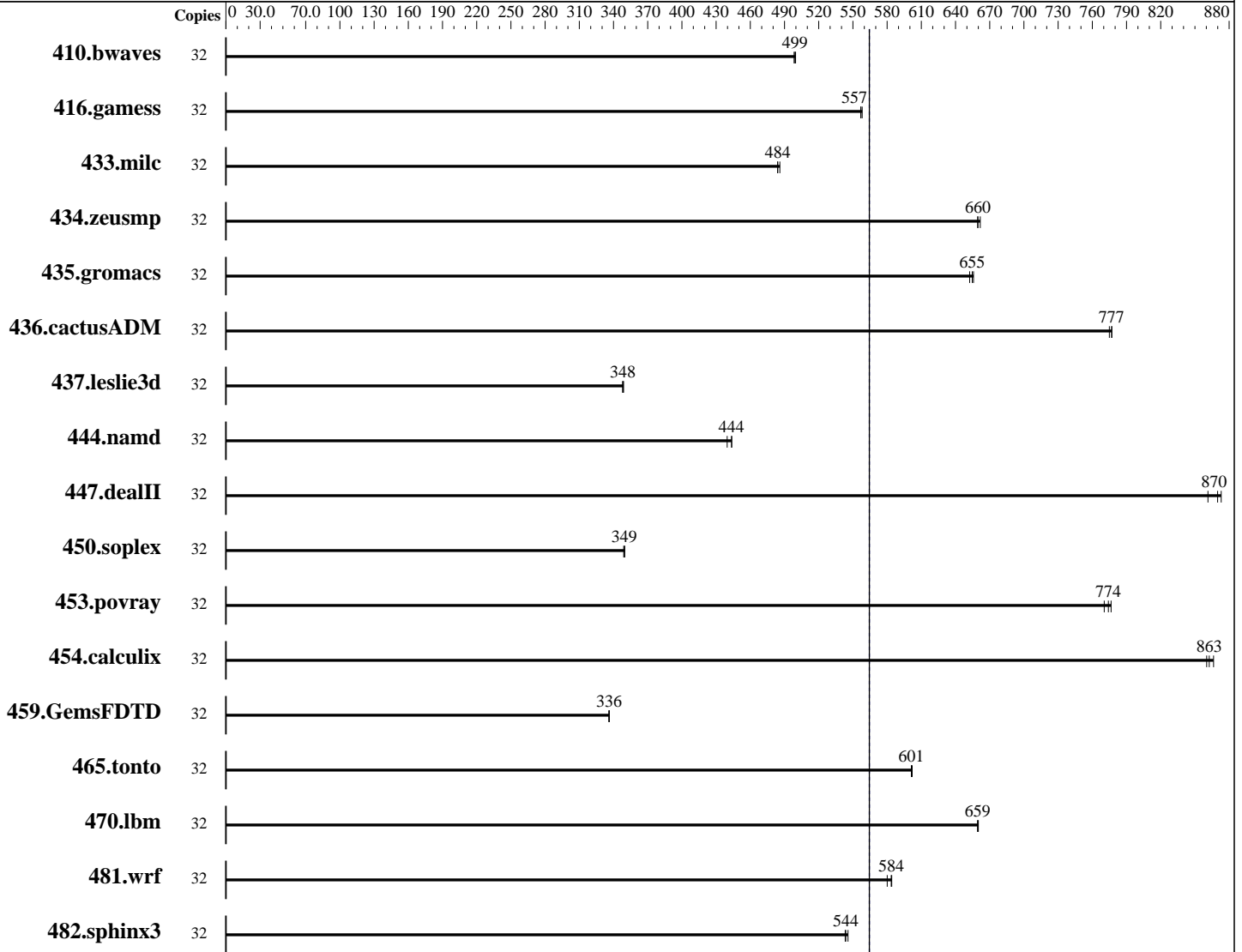|	
CPU2006 license: 3	**Test date:** Oct-2014
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Sep-2014
Tested by: Hewlett-Packard Company	**Software Availability:** Sep-2014

L3 Cache:	20 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	2 x 300 GB SAS, RAID 1		
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	870	500	**871**	**499**	873	498	32	870	500	**871**	**499**	873	498
416.gamess	32	1123	558	**1125**	**557**	1125	557	32	1123	558	**1125**	**557**	1125	557
433.milc	32	605	486	**607**	**484**	607	484	32	605	486	**607**	**484**	607	484
434.zeusmp	32	440	662	442	659	**441**	**660**	32	440	662	442	659	**441**	**660**
435.gromacs	32	350	652	**349**	**655**	348	656	32	350	652	**349**	**655**	348	656
436.cactusADM	32	493	775	492	777	**492**	**777**	32	493	775	492	777	**492**	**777**
437.leslie3d	32	864	348	**864**	**348**	862	349	32	864	348	**864**	**348**	862	349
444.namd	32	**579**	**444**	584	440	578	444	32	**579**	**444**	584	440	578	444
447.dealII	32	**421**	**870**	425	861	419	873	32	**421**	**870**	425	861	419	873
450.soplex	32	763	350	**764**	**349**	765	349	32	763	350	**764**	**349**	765	349
453.povray	32	219	776	**220**	**774**	221	770	32	219	776	**220**	**774**	221	770
454.calculix	32	307	860	**306**	**863**	305	866	32	307	860	**306**	**863**	305	866
459.GemsFDTD	32	1009	336	**1010**	**336**	1011	336	32	1009	336	**1010**	**336**	1011	336
465.tonto	32	524	601	**524**	**601**	523	602	32	524	601	**524**	**601**	523	602
470.lbm	32	666	660	**667**	**659**	667	659	32	666	660	**667**	**659**	667	659
481.wrf	32	616	580	612	584	**612**	**584**	32	616	580	612	584	**612**	**584**
482.sphinx3	32	1148	543	**1147**	**544**	1143	546	32	1148	543	**1147**	**544**	1143	546

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:
      echo 1>   /proc/sys/vm/drop_caches
     runspec command invoked through numactl i.e.:
      numactl --interleave=all runspec <etc>

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

SPECfp_rate2006 = 564

SPECfp_rate_base2006 = 564

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

Operating System Notes (Continued)

```
Accelerator Ratio for Reads/Writes set to 25% Read / 75% Write
```

Platform Notes

```
BIOS Configuration:
   HP Power Profile set to Maximum Performance
   QPI Snoop Configuration set to Early Snoop
   Thermal Configuration set so Maximum Cooling
   Processor Power and Utilization Monitoring set to Disabled
   Memory Refresh Rate set to 1x Refresh

 Sysinfo program /cpu/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on pl20.epc.external.hp.com Sat Oct 18 20:35:37 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)
       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 : 8
       siblings  : 16
       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:       263850244 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
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

$SPECfp\_rate2006 =$ **564**

$SPECfp\_rate\_base2006 =$ **564**

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)

```
uname -a:
    Linux pl20.epc.external.hp.com 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 18 09:00

SPEC is set to: /cpu
    Filesystem                    Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rootvg01-lv01 xfs   279G  201G   78G  73% /
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 08/26/2014
    Memory:
    16x HP 752369-081 16 GB 2 rank 2133 MHz, configured at 1866 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, configured at 1866 MHz
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu/libs/32:/cpu/libs/64:/cpu/sh"

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

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

$SPECfp_rate2006 = $ 564

$SPECfp_rate_base2006 = $ 564

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

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 -opt-prefetch -auto-p32
-ansi-alias
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias
```

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

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias
```

Peak Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks (except as noted below):
```
icpc  -m64
```
```
450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

$SPECfp\_rate2006 = 564$

$SPECfp\_rate\_base2006 = 564$

Peak Compiler Invocation (Continued)

Fortran benchmarks:
    ifort -m64

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

Peak 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
    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
```

Peak Optimization Flags

C benchmarks:

        433.milc: basepeak = yes

        470.lbm: basepeak = yes

       482.sphinx3: basepeak = yes

C++ benchmarks:

        444.namd: basepeak = yes

        447.dealII: basepeak = yes

        450.soplex: basepeak = yes

        453.povray: basepeak = yes

Continued on next page

Hewlett-Packard Company

ProLiant DL380 Gen9
(2.40 GHz, Intel Xeon E5-2630 v3)

$SPECfp_rate2006 = $ 564

$SPECfp_rate_base2006 = $ 564

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

Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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

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 Nov 5 10:24:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 4 November 2014.