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

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2630L)

$SPECfp®_rate2006 = $ 336

$SPECfp_rate_base2006 = $ 328

CPU2006 license: 3	**Test date:** Apr-2012
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Jun-2012
Tested by: Hewlett-Packard Company	**Software Availability:** Mar-2012

SPECfp_rate_base2006 = 328

SPECfp_rate2006 = 336

Hardware

CPU Name: Intel Xeon E5-2630L
CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
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 6.2, (Santiago)
Kernel 2.6.32-220.el6.x86_64
Compiler: C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux;
Fortran: Version 12.1.2.273 of Intel Fortran Studio XE for Linux
Auto Parallel: No
File System: ext4

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp_rate2006 =   336

ProLiant BL460c Gen8
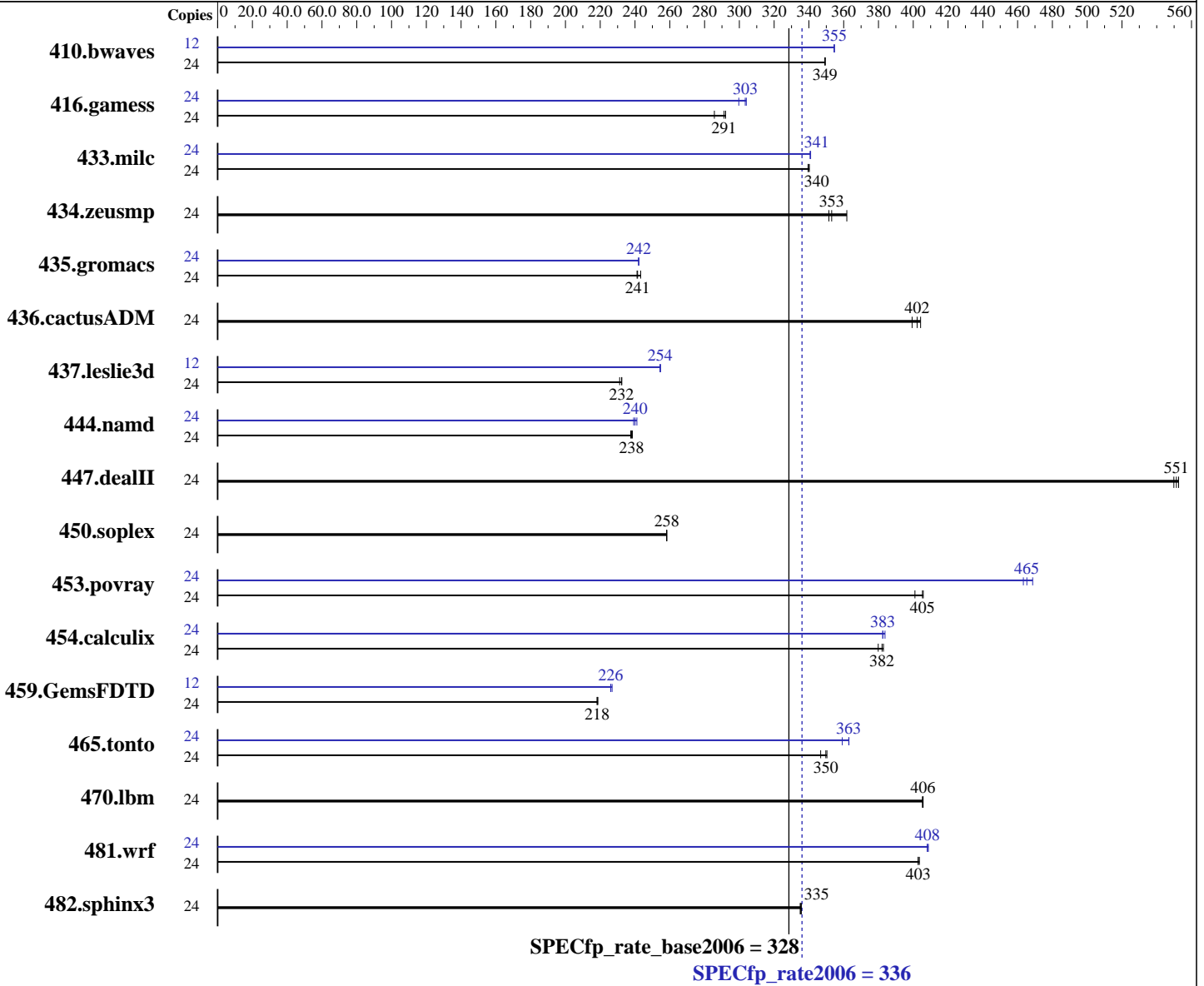(2.00 GHz, Intel Xeon E5-2630L)

SPECfp_rate_base2006 =   328

CPU2006 license: 3	**Test date:** Apr-2012
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Jun-2012
Tested by: Hewlett-Packard Company	**Software Availability:** Mar-2012

L3 Cache:	15 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)	Peak Pointers:	32/64-bit
		Other Software:	HP Array Configuration Utility, CLI version
Disk Subsystem:	2 x 146 GB 15 K 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	24	934	349	**934**	**349**	934	349	12	**460**	**355**	460	355	460	355
416.gamess	24	1609	292	**1614**	**291**	1645	286	24	1546	304	**1549**	**303**	1568	300
433.milc	24	**649**	**340**	648	340	649	340	24	646	341	**647**	**341**	647	341
434.zeusmp	24	621	351	**619**	**353**	604	362	24	621	351	**619**	**353**	604	362
435.gromacs	24	704	243	711	241	**710**	**241**	24	708	242	708	242	**708**	**242**
436.cactusADM	24	**713**	**402**	718	399	710	404	24	**713**	**402**	718	399	710	404
437.leslie3d	24	971	232	**971**	**232**	976	231	12	443	255	443	254	**443**	**254**
444.namd	24	810	238	**809**	**238**	807	238	24	805	239	**802**	**240**	798	241
447.dealII	24	**498**	**551**	499	550	497	553	24	**498**	**551**	499	550	497	553
450.soplex	24	**775**	**258**	775	258	775	258	24	**775**	**258**	775	258	775	258
453.povray	24	315	406	**315**	**405**	318	401	24	276	463	**274**	**465**	272	469
454.calculix	24	521	380	517	383	**518**	**382**	24	516	384	518	382	**518**	**383**
459.GemsFDTD	24	1165	219	**1167**	**218**	1167	218	12	563	226	561	227	**563**	**226**
465.tonto	24	**675**	**350**	674	350	681	347	24	651	363	**651**	**363**	658	359
470.lbm	24	813	406	**813**	**406**	814	405	24	813	406	**813**	**406**	814	405
481.wrf	24	664	404	666	403	**665**	**403**	24	656	409	**657**	**408**	657	408
482.sphinx3	24	**1396**	**335**	1394	336	1396	335	24	**1396**	**335**	1394	336	1396	335

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/redhat_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>

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2630L)

SPECfp_rate2006 =   336

SPECfp_rate_base2006 =   328

CPU2006 license: 3		**Test date:**	Apr-2012
Test sponsor: Hewlett-Packard Company		**Hardware Availability:**	Jun-2012
Tested by: Hewlett-Packard Company		**Software Availability:**	Mar-2012

Operating System Notes (Continued)

```
Drive Write Cache set to Enabled in HP Array Configuration Utility, CLI version
Accelerator Ratio for Reads/Writes set to = 100% Read / 0% Write in HP Array Configuration Utility, CLI version
```

Platform Notes

```
BIOS Configuration:
 HP Power Profile set to Custom
 Energy/Performance Bias is set to Maximum Performance
 Thermal Configuration set to Maximum Cooling
 Collaborative Power Control set to Disabled
 Processor Power and Utilization Monitoring set to Disabled
Sysinfo program /cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on BL460G8-2 Sun Apr 22 14:26:06 2012

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 E5-2630L 0 @ 2.00GHz
      2 "physical id"s (chips)
      24 "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 : 6
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
   cache size : 15360 KB

From /proc/meminfo
   MemTotal:        132120004 kB
   HugePages_Total:         0
   Hugepagesize:         2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux BL460G8-2 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 22 14:05
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2630L)

$SPECfp\_rate2006 = 336$

$SPECfp\_rate\_base2006 = 328$

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

Test date: Apr-2012
Hardware Availability: Jun-2012
Software Availability: Mar-2012

Platform Notes (Continued)

```
 SPEC is set to: /cpu2006
    Filesystem     Type    Size   Used Avail Use% Mounted on
    /dev/mapper/vg_rh62-lv_root
                   ext4     50G    21G   26G  45% /

 Additional information from dmidecode:
   BIOS HP I31 02/21/2012
   Memory:
    16x Not Specified Not Specified 8 GB 1600 MHz 2 rank

 (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/cpu2006/libs2/32:/cpu2006/libs2/64"

 Binaries compiled on a system with 2x Xeon E5-2667 CPU + 256GB
 memory using SLES11 SP2,RC3
```

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
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2630L)

SPECfp_rate2006 =   336

SPECfp_rate_base2006 =   328

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Apr-2012
Hardware Availability: Jun-2012
Software Availability: Mar-2012

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:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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

```
   410.bwaves: -DSPEC_CPU_LP64
```

Continued on next page

SPEC CFP2006 Result

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2630L)

SPECfp_rate2006 =   336

SPECfp_rate_base2006 =   328

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Apr-2012

Hardware Availability: Jun-2012

Software Availability: Mar-2012

Peak Portability Flags (Continued)

```
    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
      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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
                -opt-mem-layout-trans=3

       470.lbm: basepeak = yes

    482.sphinx3: basepeak = yes
```

C++ benchmarks:

```
      444.namd: -xAVX(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: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -prof-use(pass 2) -static

    416.gamess: -xAVX(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- -static
```

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2630L)

SPECfp_rate2006 =   336

SPECfp_rate_base2006 =   328

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Apr-2012

Hardware Availability: Jun-2012

Software Availability: Mar-2012

Peak Optimization Flags (Continued)

```
    434.zeusmp: basepeak = yes

    437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

  459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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

Benchmarks using both Fortran and C:

```
    435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                 -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
                 -static -auto-ilp32 -opt-mem-layout-trans=3

  436.cactusADM: basepeak = yes

    454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
                  -opt-mem-layout-trans=3

       481.wrf: Same as 454.calculix
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120425.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120425.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.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 Thu Jul 24 04:52:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 May 2012.