



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp<sup>®</sup>\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

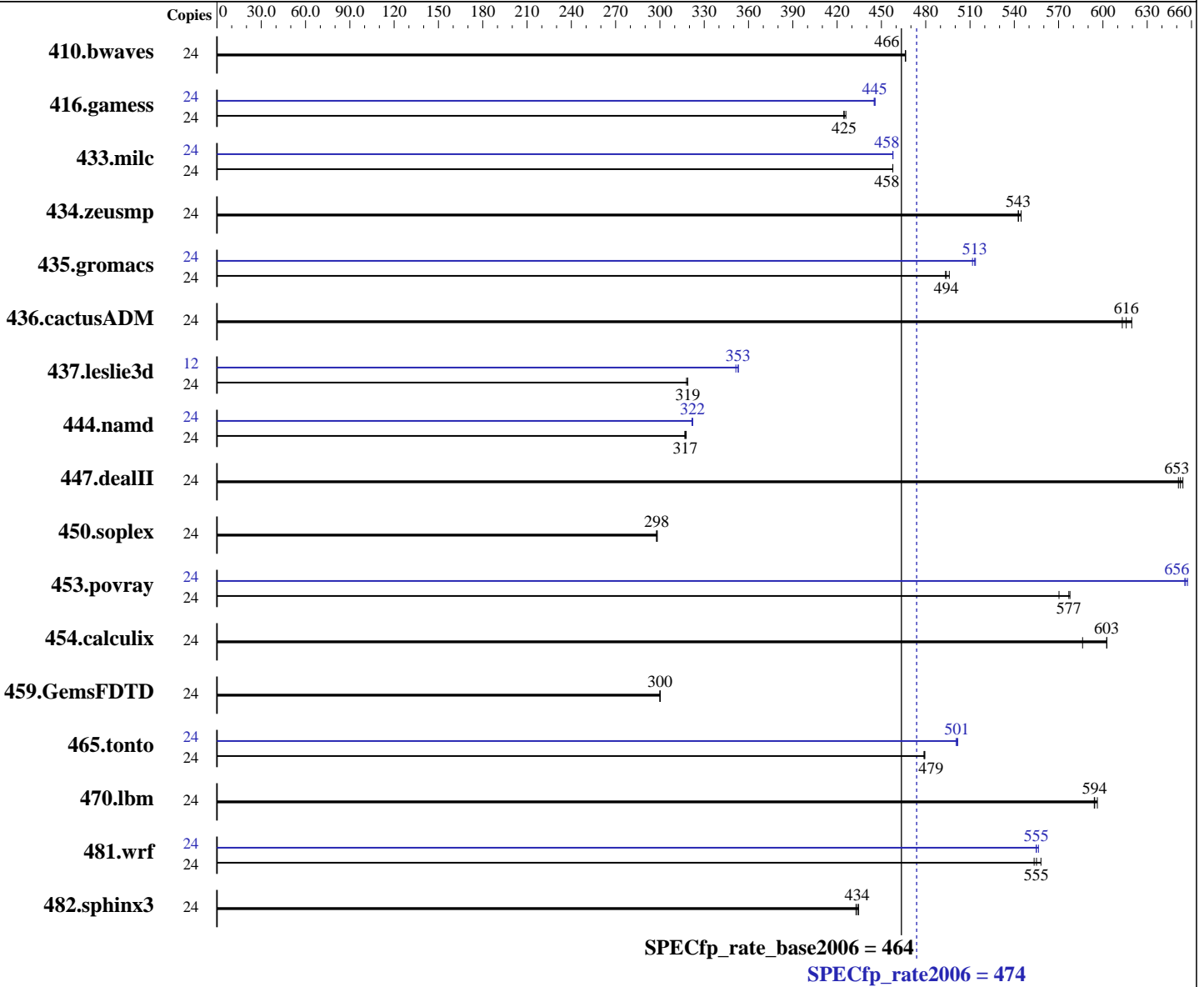
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Oct-2014

Hardware Availability: Dec-2014

Software Availability: Jan-2014



### Hardware

CPU Name: Intel Xeon E5-2620 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2400  
 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 6.5 (Santiago)  
 2.6.32-431.el6.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: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Dec-2014

Tested by: Dell Inc.

Software Availability: Jan-2014

L3 Cache: 15 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 300 GB 15000 RPM SAS  
 Other Hardware: None

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

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	700	466	699	466	<b>700</b>	<b>466</b>	24	700	466	699	466	<b>700</b>	<b>466</b>
416.gamess	24	1107	425	<b>1106</b>	<b>425</b>	1103	426	24	1054	446	1056	445	<b>1055</b>	<b>445</b>
433.milc	24	481	458	481	458	<b>481</b>	<b>458</b>	24	481	458	<b>481</b>	<b>458</b>	481	458
434.zeusmp	24	401	545	402	543	<b>402</b>	<b>543</b>	24	401	545	402	543	<b>402</b>	<b>543</b>
435.gromacs	24	346	496	<b>347</b>	<b>494</b>	347	493	24	334	514	335	512	<b>334</b>	<b>513</b>
436.cactusADM	24	468	613	<b>466</b>	<b>616</b>	463	620	24	468	613	<b>466</b>	<b>616</b>	463	620
437.leslie3d	24	708	319	709	318	<b>708</b>	<b>319</b>	12	319	353	<b>320</b>	<b>353</b>	321	351
444.namd	24	606	318	607	317	<b>607</b>	<b>317</b>	24	597	322	<b>598</b>	<b>322</b>	598	322
447.dealII	24	<b>421</b>	<b>653</b>	420	654	422	651	24	<b>421</b>	<b>653</b>	420	654	422	651
450.soplex	24	672	298	<b>672</b>	<b>298</b>	671	298	24	672	298	<b>672</b>	<b>298</b>	671	298
453.povray	24	224	570	<b>221</b>	<b>577</b>	221	578	24	194	657	195	655	<b>195</b>	<b>656</b>
454.calculix	24	<b>329</b>	<b>603</b>	329	603	338	586	24	<b>329</b>	<b>603</b>	329	603	338	586
459.GemsFDTD	24	848	300	<b>848</b>	<b>300</b>	849	300	24	848	300	<b>848</b>	<b>300</b>	849	300
465.tonto	24	<b>493</b>	<b>479</b>	493	479	493	479	24	<b>471</b>	<b>501</b>	472	501	471	502
470.lbm	24	<b>555</b>	<b>594</b>	555	594	553	596	24	<b>555</b>	<b>594</b>	555	594	553	596
481.wrf	24	<b>483</b>	<b>555</b>	480	558	484	553	24	<b>483</b>	<b>555</b>	482	556	483	555
482.sphinx3	24	<b>1078</b>	<b>434</b>	1081	433	1076	435	24	<b>1078</b>	<b>434</b>	1081	433	1076	435

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"

## Platform Notes

BIOS settings:  
 Snoop Mode set to Cluster on Die  
 Virtualization Technology disabled

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Dec-2014

Tested by: Dell Inc.

Software Availability: Jan-2014

## Platform Notes (Continued)

```

Execute Disable disabled
System Profile set to Custom
Memory Patrol Scrub set to Disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Fri Oct 24 01:43:49 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 E5-2620 v3 @ 2.40GHz
 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:      264437528 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
EST 2013 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Oct 23 14:13

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  272G  9.7G  248G   4% /

```

Additional information from dmidecode:

```

BIOS Dell Inc. 1.0.1 10/15/2014
Memory:
8x 000000000000 Not Specified 1867 MHz 1 rank
8x 002C00B3002C 36ASF2G72PZ-2G1A1 16 GB 1867 MHz 2 rank

```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Dec-2014

Tested by: Dell Inc.

Software Availability: Jan-2014

## Platform Notes (Continued)

8x 00CE00B300CE M393A2G40DB0-CPB 16 GB 1867 MHz 2 rank

(End of data from sysinfo program)

## General Notes

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

LD\_LIBRARY\_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"

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

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>

## 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.deallI: -DSPEC\_CPU\_LP64

450.soplex: -DSPEC\_CPU\_LP64

453.povray: -DSPEC\_CPU\_LP64

454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Dec-2014

Tested by: Dell Inc.

Software Availability: Jan-2014

## Base Portability Flags (Continued)

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 -opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
 -ansi-alias -opt-mem-layout-trans=3

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 -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

Same as Base Portability Flags



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Dec-2014

Tested by: Dell Inc.

Software Availability: Jan-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)  
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)  
-auto-ilp32

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)  
-opt-mem-layout-trans=3(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)  
-opt-mem-layout-trans=3(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

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) -unroll4  
-auto -inline-calloc -opt-malloc-options=3

### Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2)  
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp\_rate2006 = 474

PowerEdge FC630 (Intel Xeon E5-2620 v3, 2.40 GHz)

SPECfp\_rate\_base2006 = 464

CPU2006 license: 55

Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Dec-2014

Tested by: Dell Inc.

Software Availability: Jan-2014

## Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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-revC.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revE.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-revC.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Dec 3 10:30:54 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 2 December 2014.