



SPEC[®] CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp[®]_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

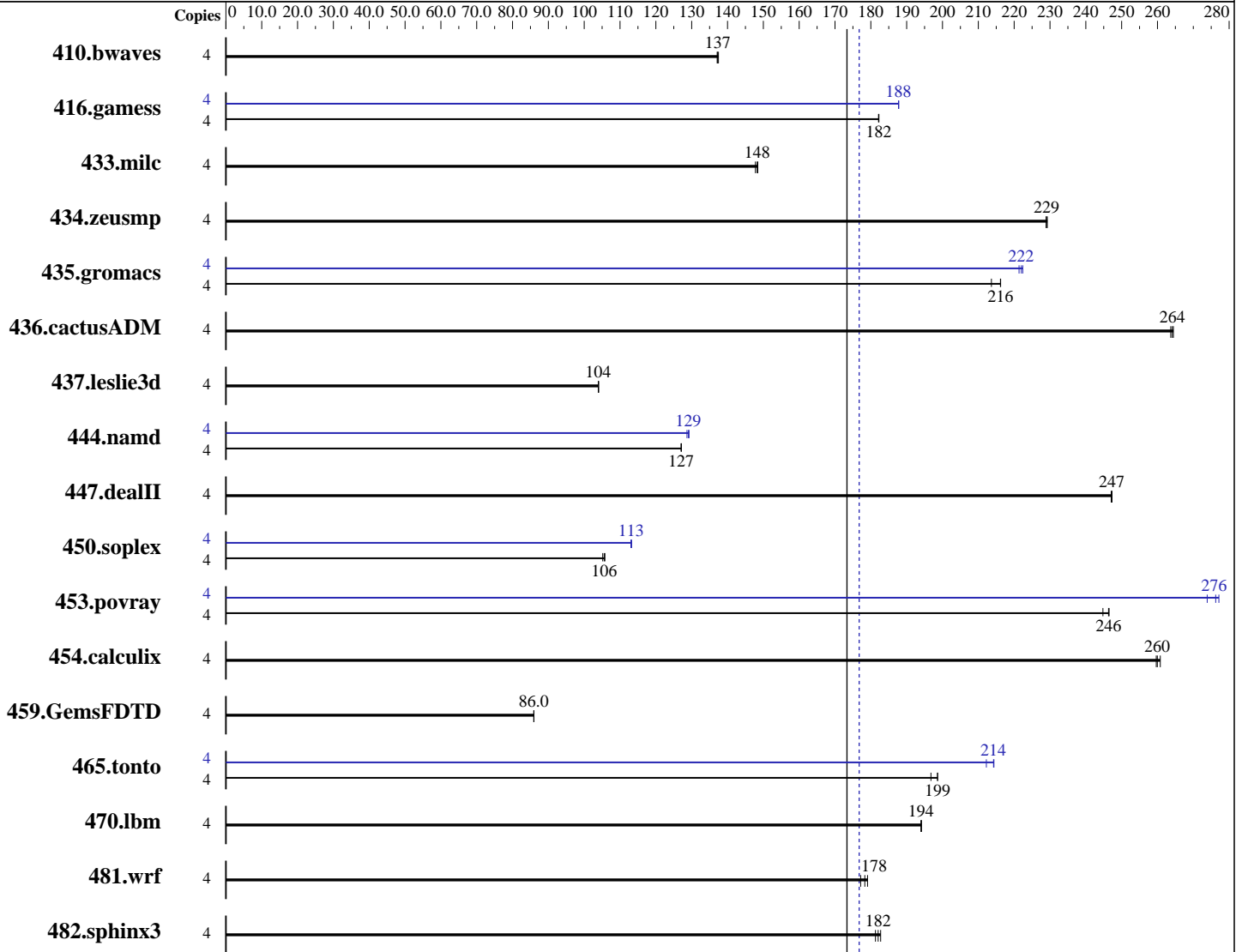
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Sep-2015

Hardware Availability: Nov-2015

Software Availability: Sep-2015



SPECfp_rate_base2006 = 173

SPECfp_rate2006 = 177

Hardware

CPU Name: Intel Xeon E3-1220 v5
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 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: SUSE Linux Enterprise Server 12
 3.12.28-4-default
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext4
 System State: Run level 3 multi-user

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2133P-U)
Disk Subsystem: 1 x 500 GB 7200 RPM SATA
Other Hardware: None

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	4	<u>396</u>	<u>137</u>	396	137	395	137	4	<u>396</u>	<u>137</u>	396	137	395	137
416.gamess	4	430	182	430	182	<u>430</u>	<u>182</u>	4	417	188	<u>417</u>	<u>188</u>	417	188
433.milc	4	248	148	247	148	<u>248</u>	<u>148</u>	4	248	148	247	148	<u>248</u>	<u>148</u>
434.zeusmp	4	159	229	<u>159</u>	<u>229</u>	159	229	4	159	229	<u>159</u>	<u>229</u>	159	229
435.gromacs	4	134	214	132	216	<u>132</u>	<u>216</u>	4	128	222	<u>129</u>	<u>222</u>	129	221
436.cactusADM	4	<u>181</u>	<u>264</u>	181	264	181	264	4	<u>181</u>	<u>264</u>	181	264	181	264
437.leslie3d	4	<u>362</u>	<u>104</u>	361	104	362	104	4	<u>362</u>	<u>104</u>	361	104	362	104
444.namd	4	252	127	252	127	<u>252</u>	<u>127</u>	4	249	129	<u>249</u>	<u>129</u>	248	129
447.dealII	4	185	247	185	247	<u>185</u>	<u>247</u>	4	185	247	185	247	<u>185</u>	<u>247</u>
450.soplex	4	315	106	<u>316</u>	<u>106</u>	317	105	4	295	113	295	113	<u>295</u>	<u>113</u>
453.povray	4	86.3	246	<u>86.4</u>	<u>246</u>	86.9	245	4	77.7	274	76.8	277	<u>77.0</u>	<u>276</u>
454.calculix	4	127	261	127	260	<u>127</u>	<u>260</u>	4	127	261	127	260	<u>127</u>	<u>260</u>
459.GemsFDTD	4	494	86.0	494	85.9	<u>494</u>	<u>86.0</u>	4	494	86.0	494	85.9	<u>494</u>	<u>86.0</u>
465.tonto	4	198	199	200	197	<u>198</u>	<u>199</u>	4	185	212	184	214	<u>184</u>	<u>214</u>
470.lbm	4	<u>283</u>	<u>194</u>	283	194	283	194	4	<u>283</u>	<u>194</u>	283	194	283	194
481.wrf	4	250	179	<u>251</u>	<u>178</u>	252	177	4	250	179	<u>251</u>	<u>178</u>	252	177
482.sphinx3	4	430	181	427	183	<u>428</u>	<u>182</u>	4	430	181	427	183	<u>428</u>	<u>182</u>

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:
Virtualization Technology disabled
System Profile set to Performance

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

Platform Notes (Continued)

Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on linux-oecl Mon Sep 21 15:53:01 2015

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 E3-1220 v5 @ 3.00GHz
 1 "physical id"s (chips)
 4 "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 : 4
  siblings  : 4
  physical 0: cores 0 1 2 3
  cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal:      66066084 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 0
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12"
VERSION_ID="12"
PRETTY_NAME="SUSE Linux Enterprise Server 12"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12"
```

```
uname -a:
Linux linux-oecl 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 21 10:37
```

```
SPEC is set to: /root/cpu2006-1.2
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

Platform Notes (Continued)

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda2	ext4	451G	8.4G	442G	2%	/

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 Dell Inc. 0.3.16 09/09/2015

Memory:

```
1x 00AD00000000 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
2x 00AD0000020B HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
1x 00AD00000800 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
```

(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 Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

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>

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 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

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 -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 (except as noted below):

```

icpc -m64

```

```

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

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
 450.soplex: -D_FILE_OFFSET_BITS=64
 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: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
 -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

Peak Optimization Flags (Continued)

450.soplex: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -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:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -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:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml>



SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp_rate2006 = 177

PowerEdge T330 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECfp_rate_base2006 = 173

CPU2006 license: 55

Test date: Sep-2015

Test sponsor: Dell Inc.

Hardware Availability: Nov-2015

Tested by: Dell Inc.

Software Availability: Sep-2015

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 Tue Nov 17 19:17:02 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 November 2015.