



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp[®]2006 = **111**

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = **105**

CPU2006 license: 9050

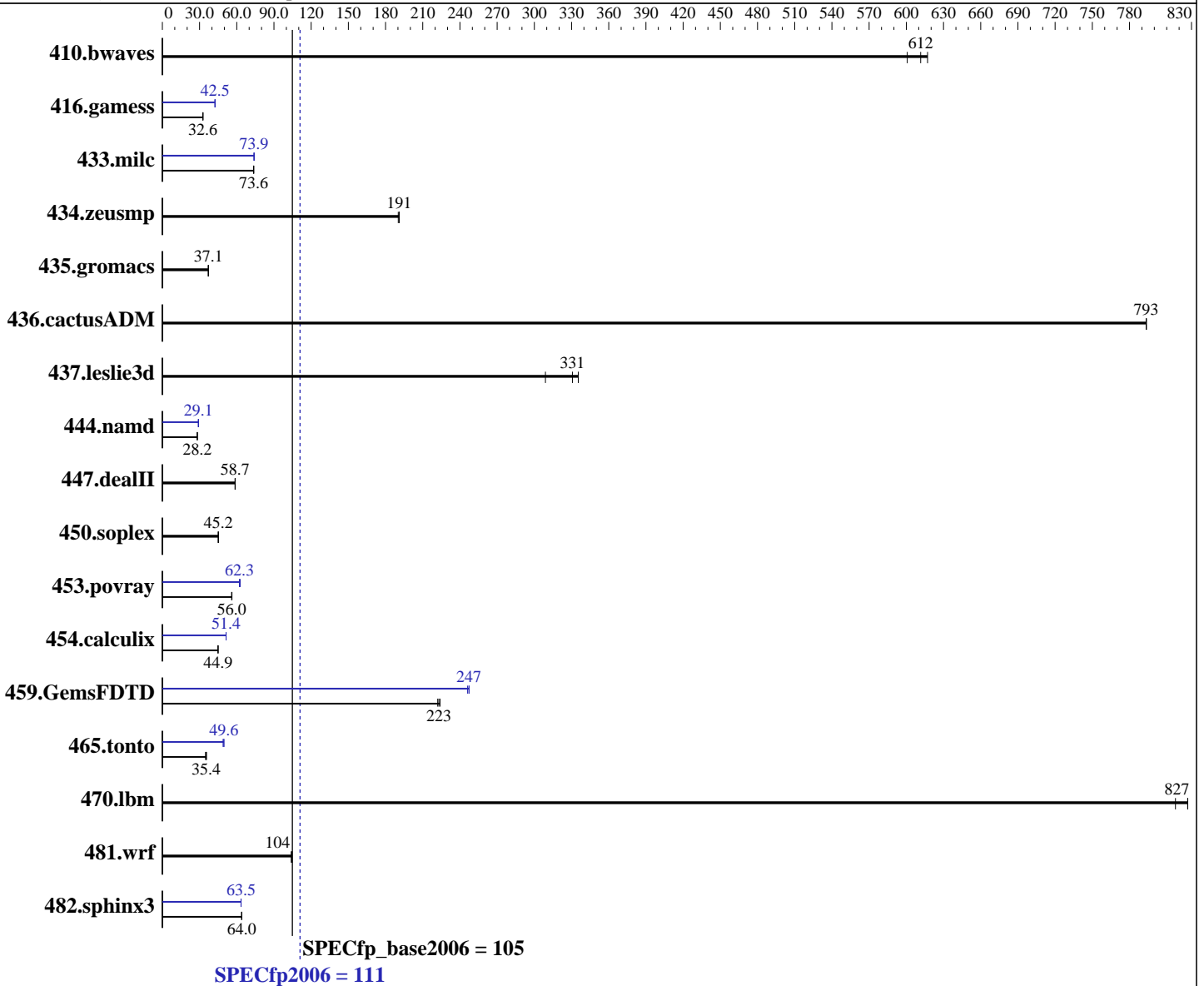
Test date: Nov-2014

Test sponsor: Quanta Computer Inc.

Hardware Availability: Oct-2014

Tested by: Quanta Computer Inc.

Software Availability: Oct-2014



Hardware

CPU Name: Intel Xeon E5-2698 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 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: Yes
 File System: ext4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp2006 = 111

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = 105

CPU2006 license: 9050

Test date: Nov-2014

Test sponsor: Quanta Computer Inc.

Hardware Availability: Oct-2014

Tested by: Quanta Computer Inc.

Software Availability: Oct-2014

L3 Cache: 40 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)

Disk Subsystem: 197 GB 1 x 240 GB SATA, SSD
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	22.0	617	22.2	612	22.6	601	22.0	617	22.2	612	22.6	601
416.gamess	601	32.6	600	32.6	596	32.9	461	42.5	461	42.5	461	42.5
433.milc	124	73.8	125	73.6	125	73.5	124	73.9	124	73.9	124	74.1
434.zeusmp	47.8	190	47.6	191	47.6	191	47.8	190	47.6	191	47.6	191
435.gromacs	192	37.1	193	37.0	192	37.1	192	37.1	193	37.0	192	37.1
436.cactusADM	15.1	793	15.1	793	15.1	794	15.1	793	15.1	793	15.1	794
437.leslie3d	28.0	335	30.4	309	28.4	331	28.0	335	30.4	309	28.4	331
444.namd	285	28.2	285	28.1	285	28.2	276	29.1	276	29.1	276	29.1
447.dealII	195	58.7	195	58.7	195	58.7	195	58.7	195	58.7	195	58.7
450.soplex	185	45.1	185	45.2	185	45.2	185	45.1	185	45.2	185	45.2
453.povray	94.8	56.1	95.2	55.9	95.0	56.0	85.3	62.3	84.8	62.8	85.6	62.1
454.calculix	184	44.9	184	44.9	184	44.9	161	51.4	161	51.4	160	51.4
459.GemsFDTD	47.4	224	47.8	222	47.6	223	42.9	247	43.1	246	42.9	247
465.tonto	278	35.4	277	35.6	283	34.8	201	49.0	198	49.6	198	49.6
470.lbm	16.6	827	16.6	827	16.8	817	16.6	827	16.6	827	16.8	817
481.wrf	107	104	107	105	107	104	107	104	107	105	107	104
482.sphinx3	305	63.9	304	64.1	304	64.0	307	63.5	307	63.5	307	63.4

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"

Platform Notes

Sysinfo program /speccpu/speccpu_linux/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 \$# e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Tue Nov 25 09:33:14 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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp2006 = 111

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = 105

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Computer Inc.

Test date: Nov-2014

Hardware Availability: Oct-2014

Software Availability: Oct-2014

Platform Notes (Continued)

```

model name : Intel(R) Xeon(R) CPU E5-2698 v3 @ 2.30GHz
 2 "physical id"s (chips)
 64 "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 : 16
  siblings  : 32
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB

```

```

From /proc/meminfo
MemTotal:      132046688 kB
HugePages_Total:       1
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 Nov 25 04:12

```

SPEC is set to: /speccpu/speccpu_linux
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  197G   13G  175G   7% /

```

```

Additional information from dmidecode:
BIOS American Megatrends Inc. S2P_2A07 11/14/2014
Memory:
 8x NO DIMM NO DIMM
 8x Samsung M393A2G40DB0-CPB 16 GB 2133 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 = "/speccpu/speccpu_linux/libs/32:/speccpu/speccpu_linux/libs/64:/speccpu/speccpu_linux/sh"
OMP_NUM_THREADS = "32"

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp2006 = 111

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = 105

CPU2006 license: 9050

Test date: Nov-2014

Test sponsor: Quanta Computer Inc.

Hardware Availability: Oct-2014

Tested by: Quanta Computer Inc.

Software Availability: Oct-2014

General Notes (Continued)

memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
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
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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp2006 = 111

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = 105

CPU2006 license: 9050

Test date: Nov-2014

Test sponsor: Quanta Computer Inc.

Hardware Availability: Oct-2014

Tested by: Quanta Computer Inc.

Software Availability: Oct-2014

Base Optimization Flags (Continued)

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`

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:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp2006 = 111

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = 105

CPU2006 license: 9050

Test date: Nov-2014

Test sponsor: Quanta Computer Inc.

Hardware Availability: Oct-2014

Tested by: Quanta Computer Inc.

Software Availability: Oct-2014

Peak Optimization Flags (Continued)

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.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) -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

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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Quanta-Cloud-Technology-Platform-Settings-V1.0.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Quanta-Cloud-Technology-Platform-Settings-V1.0.xml>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Computer Inc.

SPECfp2006 = 111

D51PS-1U (Intel Xeon E5-2698 v3)

SPECfp_base2006 = 105

CPU2006 license: 9050

Test date: Nov-2014

Test sponsor: Quanta Computer Inc.

Hardware Availability: Oct-2014

Tested by: Quanta Computer Inc.

Software Availability: Oct-2014

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 Dec 30 16:10:44 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 December 2014.