



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

SPECfp[®]2006 =

111

QuantaGrid D51B-2U

SPECfp_base2006 =

106

CPU2006 license: 9050

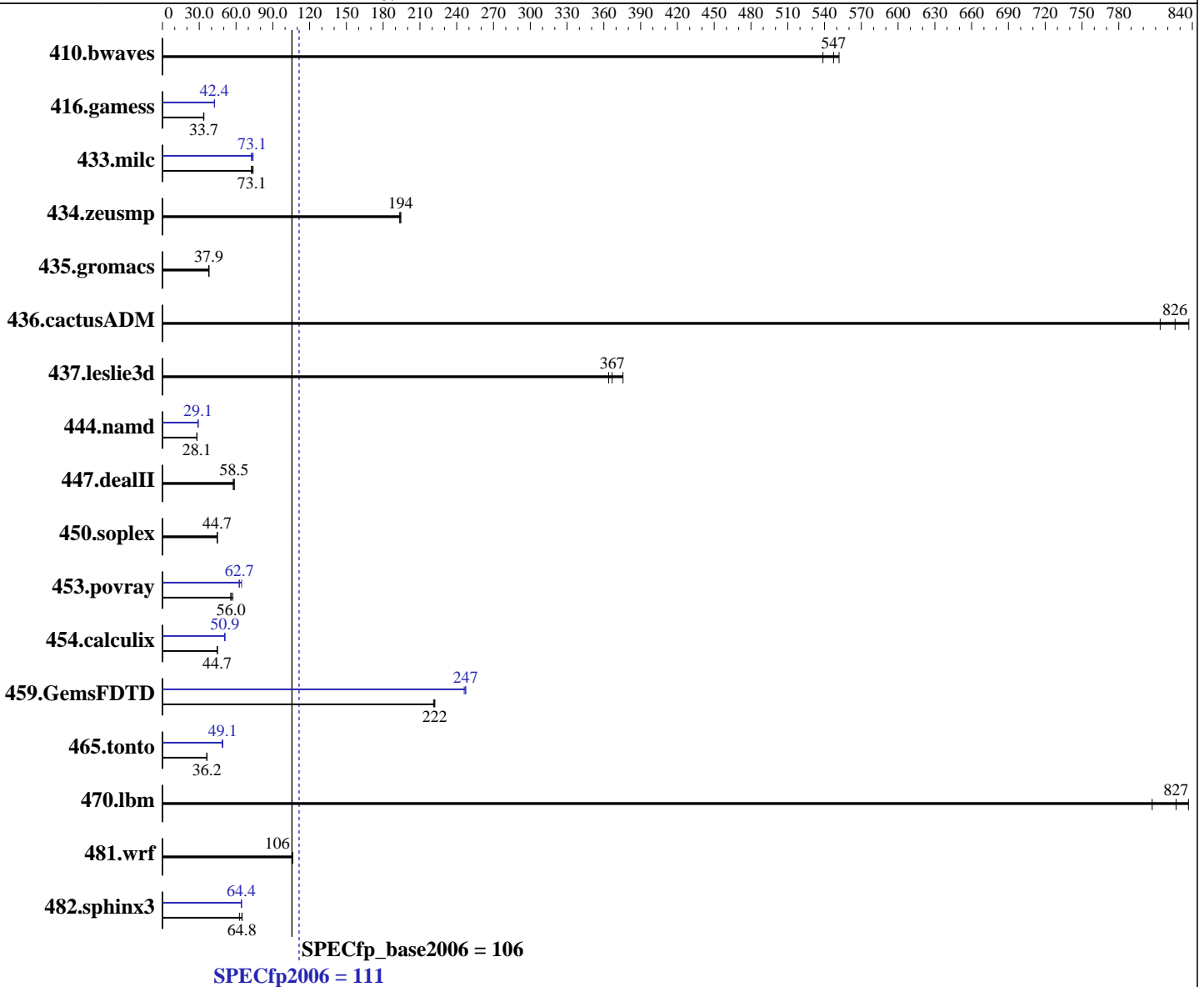
Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-2014



Hardware

CPU Name: Intel Xeon E5-2699 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 36 cores, 2 chips, 18 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 Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid D51B-2U

SPECfp2006 = **111**

SPECfp_base2006 = **106**

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-2014

L3 Cache: 45 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)

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

Disk Subsystem: 673 GB 1 x 800 GB SATA, SSD
Other Hardware: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24.8	547	25.2	539	24.6	552	24.8	547	25.2	539	24.6	552
416.gamess	584	33.5	580	33.7	581	33.7	461	42.4	462	42.4	461	42.4
433.milc	127	72.6	126	73.1	124	73.9	124	74.0	126	73.1	127	72.5
434.zeusmp	47.0	193	46.8	194	46.8	194	47.0	193	46.8	194	46.8	194
435.gromacs	189	37.9	189	37.8	188	37.9	189	37.9	189	37.8	188	37.9
436.cactusADM	14.5	826	14.3	837	14.7	814	14.5	826	14.3	837	14.7	814
437.leslie3d	25.0	376	25.6	367	25.8	364	25.0	376	25.6	367	25.8	364
444.namd	285	28.2	286	28.1	285	28.1	276	29.1	276	29.1	276	29.1
447.dealII	196	58.5	196	58.5	198	57.7	196	58.5	196	58.5	198	57.7
450.soplex	186	44.8	187	44.5	187	44.7	186	44.8	187	44.5	187	44.7
453.povray	95.0	56.0	92.8	57.3	95.5	55.7	85.0	62.6	82.4	64.5	84.8	62.7
454.calculix	185	44.6	184	44.7	184	44.8	163	50.7	162	50.9	162	50.9
459.GemsFDTD	47.8	222	48.0	221	47.8	222	43.1	246	42.9	247	42.9	247
465.tonto	271	36.4	272	36.2	272	36.2	200	49.1	202	48.7	200	49.2
470.lbm	16.6	827	16.4	837	17.0	807	16.6	827	16.4	837	17.0	807
481.wrf	105	106	105	106	106	106	105	106	105	106	106	106
482.sphinx3	301	64.8	300	65.0	311	62.8	303	64.3	302	64.4	302	64.5

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 /root/speccpu_linux_matt/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Fri Nov 21 18:12:59 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>

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

SPECfp2006 =

111

QuantaGrid D51B-2U

SPECfp_base2006 =

106

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-2014

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
 2 "physical id"s (chips)
 72 "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 : 18
  siblings  : 36
  physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB

From /proc/meminfo
MemTotal:      264409480 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 Nov 21 12:53

SPEC is set to: /root/speccpu_linux_matt
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  673G  14G  626G   3% /

Additional information from dmidecode:
BIOS American Megatrends Inc. S2B_3A17 11/07/2014
Memory:
 8x NO DIMM NO DIMM
16x 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 = "/root/speccpu_linux_matt/libs/32:/root/speccpu_linux_matt/libs/64:/root/speccpu_linux_matt/sh"
OMP_NUM_THREADS = "36"

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

SPECfp2006 =

111

QuantaGrid D51B-2U

SPECfp_base2006 =

106

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-2014

General Notes (Continued)

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
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.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 -parallel -opt-prefetch
-ansi-alias

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

SPECfp2006 =

111

QuantaGrid D51B-2U

SPECfp_base2006 =

106

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-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

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 5



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

SPECfp2006 =

111

QuantaGrid D51B-2U

SPECfp_base2006 =

106

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-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-Technolog-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-Technolog-Platform-Settings-V1.0.xml>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Quanta Cloud Technology

(Test Sponsor: Quanta Computer Inc.)

QuantaGrid D51B-2U

SPECfp2006 =

111

SPECfp_base2006 =

106

CPU2006 license: 9050

Test sponsor: Quanta Computer Inc.

Tested by: Quanta Cloud Technology

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-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 Fri Dec 19 18:51:34 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 December 2014.