



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp[®]2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

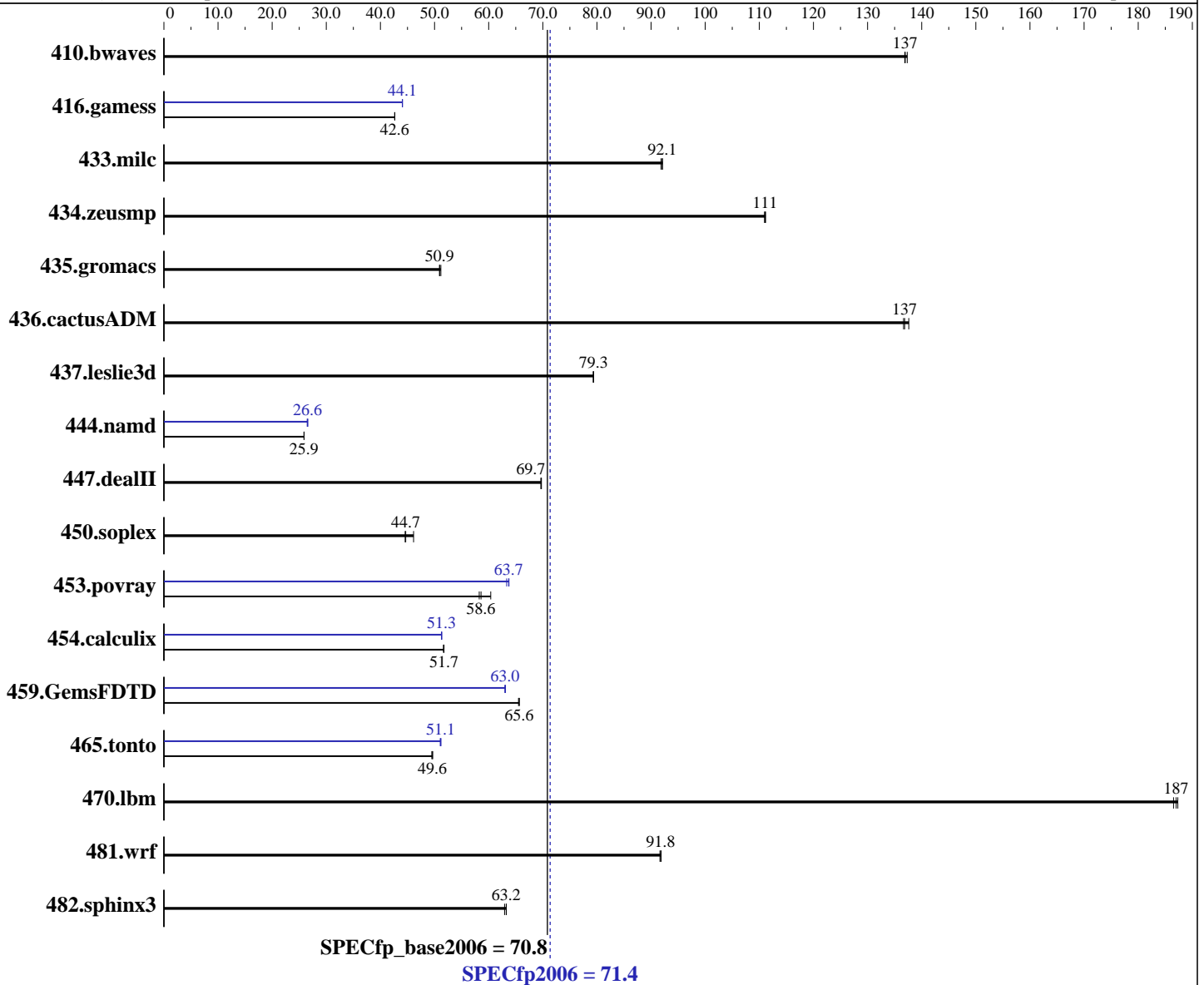
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2015



Hardware

CPU Name: Intel Pentium G4400
 CPU Characteristics:
 CPU MHz: 3300
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 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: Red Hat Enterprise Linux Server release 7.1,
Kernal 3.10.0-229.e17.x86_64
 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: Yes
 File System: xfs
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2015

L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 1Rx8 PC4-2133P-U)
Disk Subsystem: 1 x 400 GB SATA III SSD
Other Hardware: None

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 | 99.3 | 137 | <u>99.2</u> | <u>137</u> | 99.0 | 137 | 99.3 | 137 | <u>99.2</u> | <u>137</u> | 99.0 | 137 |
| 416.gamess | 459 | 42.7 | <u>459</u> | <u>42.6</u> | 459 | 42.6 | 445 | 44.0 | 444 | 44.1 | <u>444</u> | <u>44.1</u> |
| 433.milc | <u>99.7</u> | <u>92.1</u> | 99.7 | 92.1 | 100 | 91.8 | <u>99.7</u> | <u>92.1</u> | 99.7 | 92.1 | 100 | 91.8 |
| 434.zeusmp | 81.9 | 111 | 82.0 | 111 | <u>81.9</u> | <u>111</u> | 81.9 | 111 | 82.0 | 111 | <u>81.9</u> | <u>111</u> |
| 435.gromacs | 140 | 51.2 | <u>140</u> | <u>50.9</u> | 140 | 50.9 | 140 | 51.2 | <u>140</u> | <u>50.9</u> | 140 | 50.9 |
| 436.cactusADM | <u>87.3</u> | <u>137</u> | 86.8 | 138 | 87.5 | 137 | <u>87.3</u> | <u>137</u> | 86.8 | 138 | 87.5 | 137 |
| 437.leslie3d | 118 | 79.4 | <u>118</u> | <u>79.3</u> | 118 | 79.3 | 118 | 79.4 | <u>118</u> | <u>79.3</u> | 118 | 79.3 |
| 444.namd | 310 | 25.9 | 310 | 25.9 | <u>310</u> | <u>25.9</u> | 303 | 26.5 | 302 | 26.6 | <u>302</u> | <u>26.6</u> |
| 447.dealII | 164 | 69.7 | 164 | 69.7 | <u>164</u> | <u>69.7</u> | 164 | 69.7 | 164 | 69.7 | <u>164</u> | <u>69.7</u> |
| 450.soplex | 181 | 46.1 | 187 | 44.6 | <u>187</u> | <u>44.7</u> | 181 | 46.1 | 187 | 44.6 | <u>187</u> | <u>44.7</u> |
| 453.povray | 88.1 | 60.4 | <u>90.8</u> | <u>58.6</u> | 91.3 | 58.3 | 83.4 | 63.8 | 84.0 | 63.3 | <u>83.5</u> | <u>63.7</u> |
| 454.calculix | 159 | 51.7 | <u>159</u> | <u>51.7</u> | 160 | 51.6 | <u>161</u> | <u>51.3</u> | 161 | 51.3 | 161 | 51.3 |
| 459.GemsFDTD | 162 | 65.7 | 162 | 65.5 | <u>162</u> | <u>65.6</u> | 168 | 63.0 | <u>168</u> | <u>63.0</u> | 168 | 63.1 |
| 465.tonto | <u>198</u> | <u>49.6</u> | 199 | 49.5 | 198 | 49.6 | <u>192</u> | <u>51.1</u> | 193 | 51.0 | 192 | 51.2 |
| 470.lbm | 73.4 | 187 | <u>73.5</u> | <u>187</u> | 73.7 | 187 | 73.4 | 187 | <u>73.5</u> | <u>187</u> | 73.7 | 187 |
| 481.wrf | 122 | 91.9 | 122 | 91.6 | <u>122</u> | <u>91.8</u> | 122 | 91.9 | 122 | 91.6 | <u>122</u> | <u>91.8</u> |
| 482.sphinx3 | 310 | 62.9 | 308 | 63.3 | <u>308</u> | <u>63.2</u> | 310 | 62.9 | 308 | 63.3 | <u>308</u> | <u>63.2</u> |

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

As tested, the system used a Supermicro CSE-732G-903B chassis.
The chassis is configured with a PWS-903-PQ power supply, 1 SNK-P0051A4P heatsink, as well as 1 FAN-0124L4 rear cooling fan.
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Tue Dec 15 02:22:29 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>

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2015

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Pentium(R) CPU G4400 @ 3.30GHz
 1 "physical id"s (chips)
 2 "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 : 2
  siblings  : 2
  physical 0: cores 0 1
  cache size : 3072 KB

```

```

From /proc/meminfo
MemTotal:      16045360 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.1 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.1"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

```

```

uname -a:
Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38
EST 2015 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Dec 11 13:28

```

SPEC is set to: /usr/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        xfs   369G  171G  199G  47% /

```

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 American Megatrends Inc. 1.0c 12/09/2015
Memory:
 4x Micron 8ATF51264AZ-2G1A2 4 GB 1 rank 2133 MHz

```

(End of data from sysinfo program)



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2015

General Notes

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

KMP_AFFINITY = "granularity=fine,compact,1,0"

LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

OMP_NUM_THREADS = "2"

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

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



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2015

Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xSSE4.2(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) -fno-alias -auto-ilp32

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2015

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(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 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(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: -xSSE4.2(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 -opt-prefetch
-parallel

465.tonto: -xSSE4.2(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) -inline-calloc -opt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.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/Supermicro-Platform-Settings-V1.2-revH.xml>



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ , Intel Pentium G4400)

SPECfp2006 = 71.4

SPECfp_base2006 = 70.8

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2015

Hardware Availability: Sep-2015

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 Jan 12 15:45:31 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 January 2016.