



SPEC® CFP2006 Result

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Supermicro

Supermicro motherboard X10DAL-i
(X10DAL-i , Intel Xeon E5-2697 v3)

SPECfp®2006 = 111

SPECfp_base2006 = 106

CPU2006 license: 001176

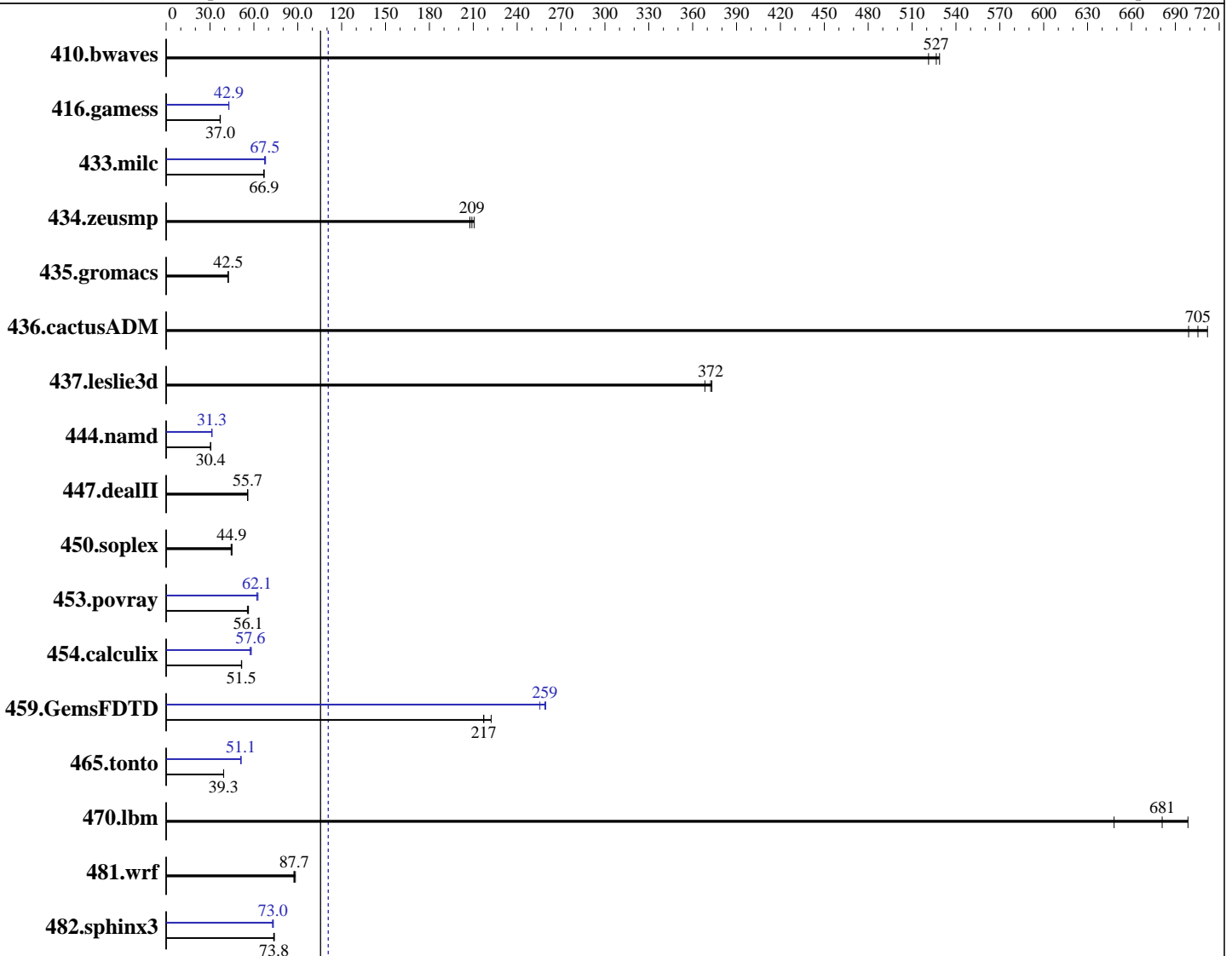
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Mar-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014



SPECfp_base2006 = 106

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Hardware

CPU Name: Intel Xeon E5-2697 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: Red Hat Enterprise Linux Server release 7.0, Kernel 3.10.0-123.9.3.el7.x86_64
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)

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L3 Cache: 35 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 200 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	25.7	529	26.1	521	<u>25.8</u>	<u>527</u>	25.7	529	26.1	521	<u>25.8</u>	<u>527</u>
416.gamess	<u>529</u>	<u>37.0</u>	528	37.1	531	36.8	456	42.9	<u>457</u>	<u>42.9</u>	457	42.8
433.milc	137	67.0	<u>137</u>	<u>66.9</u>	138	66.7	136	67.4	<u>136</u>	<u>67.5</u>	135	68.0
434.zeusmp	43.8	208	43.2	211	<u>43.5</u>	<u>209</u>	43.8	208	43.2	211	<u>43.5</u>	<u>209</u>
435.gromacs	<u>168</u>	<u>42.5</u>	168	42.6	169	42.2	<u>168</u>	<u>42.5</u>	168	42.6	169	42.2
436.cactusADM	<u>16.9</u>	<u>705</u>	16.8	712	17.1	699	<u>16.9</u>	<u>705</u>	16.8	712	17.1	699
437.leslie3d	<u>25.2</u>	<u>372</u>	25.5	368	25.2	373	<u>25.2</u>	<u>372</u>	25.5	368	25.2	373
444.namd	<u>263</u>	<u>30.4</u>	264	30.4	263	30.5	<u>256</u>	<u>31.3</u>	256	31.3	256	31.3
447.dealII	206	55.7	<u>205</u>	<u>55.7</u>	205	55.9	206	55.7	<u>205</u>	<u>55.7</u>	205	55.9
450.soplex	186	44.9	<u>186</u>	<u>44.9</u>	188	44.4	186	44.9	<u>186</u>	<u>44.9</u>	188	44.4
453.povray	95.7	55.6	94.5	56.3	<u>94.9</u>	<u>56.1</u>	84.7	62.8	85.7	62.1	<u>85.6</u>	<u>62.1</u>
454.calculix	160	51.5	160	51.7	<u>160</u>	<u>51.5</u>	143	57.6	<u>143</u>	<u>57.6</u>	142	58.2
459.GemsFDTD	<u>48.9</u>	<u>217</u>	47.7	222	48.9	217	<u>41.0</u>	<u>259</u>	40.9	260	41.5	256
465.tonto	250	39.3	250	39.3	<u>250</u>	<u>39.3</u>	193	51.0	<u>192</u>	<u>51.1</u>	192	51.3
470.lbm	19.7	699	21.2	648	<u>20.2</u>	<u>681</u>	19.7	699	21.2	648	<u>20.2</u>	<u>681</u>
481.wrf	126	88.4	128	87.4	<u>127</u>	<u>87.7</u>	126	88.4	128	87.4	<u>127</u>	<u>87.7</u>
482.sphinx3	265	73.5	263	74.0	<u>264</u>	<u>73.8</u>	<u>267</u>	<u>73.0</u>	268	72.8	266	73.3

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

BIOS Settings:

Enforce POR = Disabled

Memory Frequency = 2133

Early Snoop = Disable

Hyper-Threading (ALL) = Disable

As tested, the system used a Supermicro SuperChassis 743TQ-865B-SQ chassis.

The chassis is configured with a PWS-865-PQ power supply, 2 SNK-P0050AP4 heatsink, as well as 2 FAN-0104L4 chassis fan & 1 FAN-0103L4 rear cooling fan.

Sysinfo program /usr/cpu2006/config/sysinfo.rev6914

\$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb8667b5a285932ceab81e28219e1

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Test date: Mar-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

Platform Notes (Continued)

running on X10DAL-01 Mon Mar 23 14:53:52 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 E5-2697 v3 @ 2.60GHz
 2 "physical id"s (chips)
 28 "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 : 14
  siblings  : 14
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size : 35840 KB

```

```

From /proc/meminfo
MemTotal:      131742308 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

```

```

uname -a:
Linux X10DAL-01 3.10.0-123.9.3.el7.x86_64 #1 SMP Thu Oct 30 00:16:40 EDT 2014
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Mar 23 09:28

```

SPEC is set to: /usr/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2       xfs       183G      105G    78G  58% /

```

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

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Platform Notes (Continued)

hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. 1.0 03/06/2015

Memory:

8x Samsung (date:14/5q) M393A2G40DB0-CPB 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:

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

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

OMP_NUM_THREADS = "28"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
memory using RedHat EL 7.0

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

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Base Portability Flags (Continued)

```

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

```

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



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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:

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.dealII: 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

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Peak Optimization Flags (Continued)

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.xml>

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