



SPEC® CFP2006 Result

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Supermicro

SuperServer 6028UX-TR4
(X10DRU-X , Intel Xeon E5-2667 v3)

SPECfp®2006 = 121

SPECfp_base2006 = 117

CPU2006 license: 001176

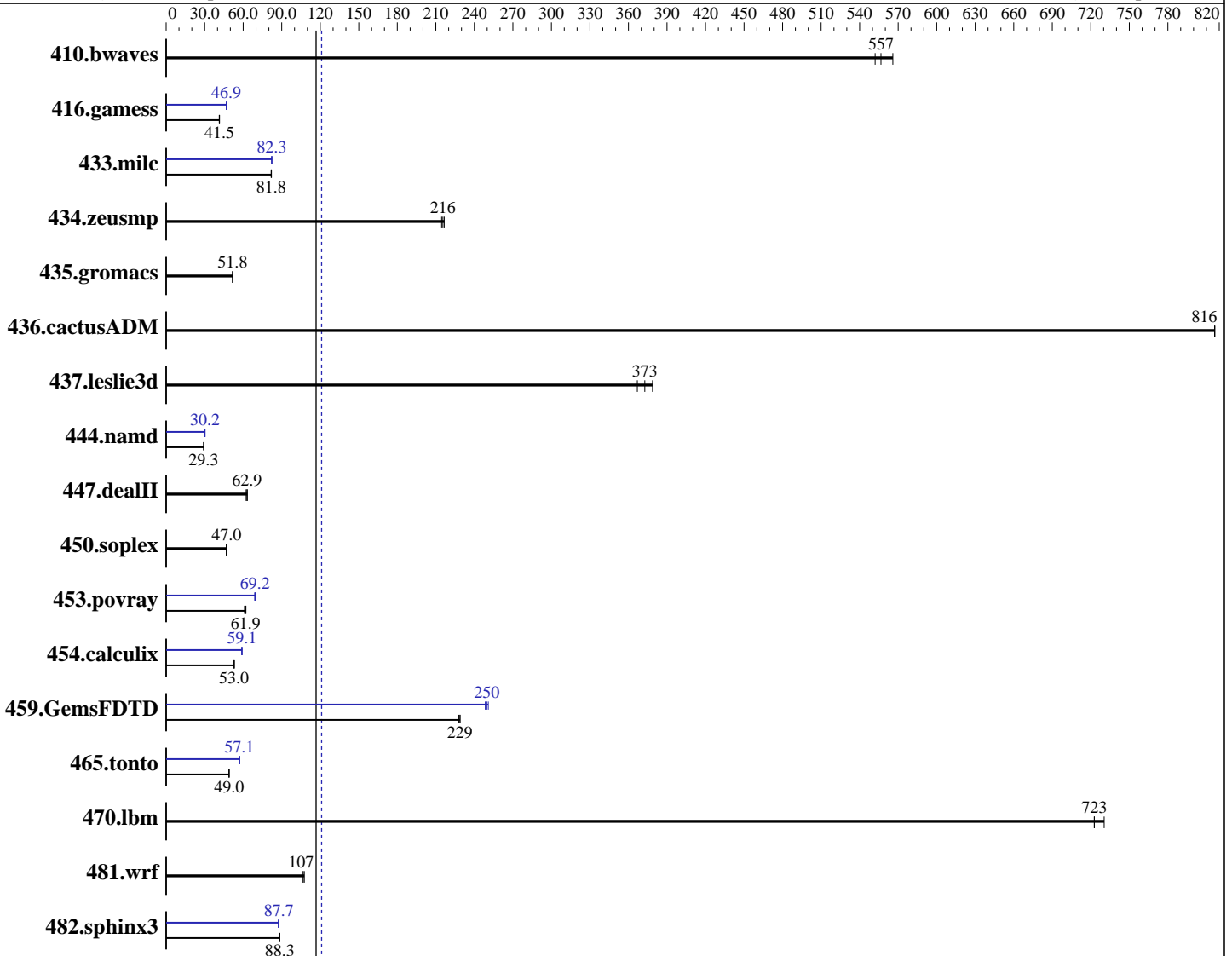
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2014

Hardware Availability: Oct-2014

Software Availability: Sep-2013



SPECfp_base2006 = 117
SPECfp2006 = 121

Hardware

CPU Name: Intel Xeon E5-2667 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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 6.5,
Kernel 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
 System State: Run level 3 (multi-user)

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L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 1000 GB SATA III, 7200 RPM
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	24.0	566	24.6	552	<u>24.4</u>	<u>557</u>	24.0	566	24.6	552	<u>24.4</u>	<u>557</u>
416.gamess	471	41.5	473	41.4	<u>472</u>	<u>41.5</u>	417	47.0	<u>417</u>	<u>46.9</u>	418	46.9
433.milc	112	81.8	<u>112</u>	<u>81.8</u>	112	82.0	112	82.2	<u>112</u>	<u>82.3</u>	112	82.3
434.zeusmp	42.4	215	42.0	217	<u>42.2</u>	<u>216</u>	42.4	215	42.0	217	<u>42.2</u>	<u>216</u>
435.gromacs	138	51.8	138	51.9	<u>138</u>	<u>51.8</u>	138	51.8	138	51.9	<u>138</u>	<u>51.8</u>
436.cactusADM	<u>14.6</u>	<u>816</u>	14.6	816	14.6	816	<u>14.6</u>	<u>816</u>	14.6	816	14.6	816
437.leslie3d	24.8	379	<u>25.2</u>	<u>373</u>	25.6	367	24.8	379	<u>25.2</u>	<u>373</u>	25.6	367
444.namd	<u>274</u>	<u>29.3</u>	274	29.3	274	29.3	265	30.3	265	30.2	<u>265</u>	<u>30.2</u>
447.dealII	<u>182</u>	<u>62.9</u>	184	62.3	181	63.2	<u>182</u>	<u>62.9</u>	184	62.3	181	63.2
450.soplex	<u>177</u>	<u>47.0</u>	176	47.3	178	46.8	<u>177</u>	<u>47.0</u>	176	47.3	178	46.8
453.povray	85.6	62.1	87.2	61.0	<u>85.9</u>	<u>61.9</u>	<u>76.9</u>	<u>69.2</u>	77.0	69.1	76.9	69.2
454.calculix	<u>156</u>	<u>53.0</u>	156	52.9	156	53.0	140	58.9	140	59.1	<u>140</u>	<u>59.1</u>
459.GemsFDTD	46.4	229	<u>46.4</u>	<u>229</u>	46.6	228	42.7	249	42.3	251	<u>42.5</u>	<u>250</u>
465.tonto	201	48.9	<u>201</u>	<u>49.0</u>	201	49.0	172	57.2	172	57.1	<u>172</u>	<u>57.1</u>
470.lbm	19.0	723	<u>19.0</u>	<u>723</u>	18.8	730	19.0	723	<u>19.0</u>	<u>723</u>	18.8	730
481.wrf	<u>105</u>	<u>107</u>	105	106	104	108	<u>105</u>	<u>107</u>	105	106	104	108
482.sphinx3	221	88.1	<u>221</u>	<u>88.3</u>	220	88.5	<u>223</u>	<u>87.3</u>	222	87.9	<u>222</u>	<u>87.7</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

BIOS settings:
Enforce POR - Disable
Memory Frequency - 2133
Enable COD - Disable
Early Snoop - Disable
SMC Performance Tuning - Profile #2
Hyper Threading - Disable

There are 16x 16GB Samsung memory modules installed in the system

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Platform Notes (Continued)

```
Sysinfo program /root/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on 192-248.hnet Fri Oct 31 17:17:30 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
model name : Intel(R) Xeon(R) CPU E5-2667 v3 @ 3.20GHz
 2 "physical id"s (chips)
 16 "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 : 8
  siblings  : 8
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      264425460 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 192-248.hnet 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 Oct 31 17:16
```

```
SPEC is set to: /root/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext4  673G  290G  349G  46% /
```

Additional information from dmidecode:

```
BIOS American Megatrends Inc. 1.00 10/14/2014
Memory:
16x 16 GB
10x Samsung (date:13/5p) M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank
1x Samsung (date:13/5q) M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank
5x Samsung (date:14/16) M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank
```

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Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

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

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

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

OMP_NUM_THREADS = "16"

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

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Base Portability Flags (Continued)

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

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

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.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

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Peak Optimization Flags (Continued)

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/Supermicro-Platform-Settings-V1.2-revF.20141203.html>

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

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revF.20141203.xml>

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

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