



# SPEC® CFP2006 Result

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**Supermicro**  
(A1SAi-2750F , Intel Atom C2750)

**SPECfp®2006 = 23.3**

**SPECfp\_base2006 = 23.0**

CPU2006 license: 001176

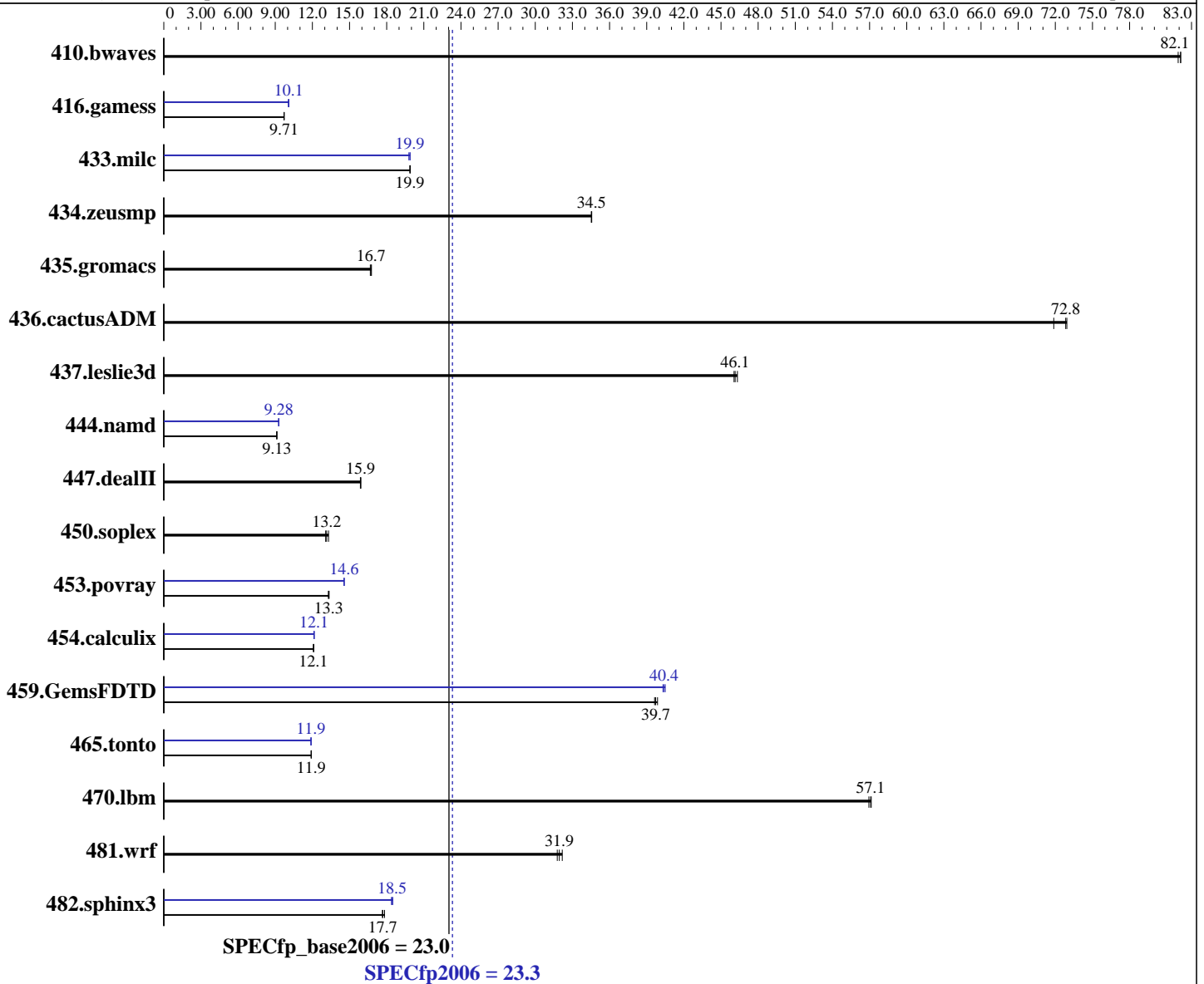
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2014

Hardware Availability: Dec-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Atom C2750  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 1 chip, 8 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 24 KB D on chip per core  
 Secondary Cache: 4 MB I+D on chip per chip, 1 MB I+D shared / 2 cores

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### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 2.6.32-358.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

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L3 Cache: None  
Other Cache: None  
Memory: 32 GB (4 x 8 GB 2Rx8 EP3L-12800E-11, ECC)  
Disk Subsystem: 1 x 300 GB SATA II, 5000 RPM  
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	165	82.1	166	81.9	<b>165</b>	<b>82.1</b>	165	82.1	166	81.9	<b>165</b>	<b>82.1</b>
416.gamess	2014	9.72	2017	9.71	<b>2016</b>	<b>9.71</b>	<b>1939</b>	<b>10.1</b>	1938	10.1	1947	10.1
433.milc	<b>462</b>	<b>19.9</b>	462	19.9	461	19.9	462	19.9	464	19.8	<b>462</b>	<b>19.9</b>
434.zeusmp	<b>264</b>	<b>34.5</b>	264	34.5	263	34.6	<b>264</b>	<b>34.5</b>	264	34.5	263	34.6
435.gromacs	426	16.8	428	16.7	<b>427</b>	<b>16.7</b>	426	16.8	428	16.7	<b>427</b>	<b>16.7</b>
436.cactusADM	164	72.9	<b>164</b>	<b>72.8</b>	166	71.9	164	72.9	<b>164</b>	<b>72.8</b>	166	71.9
437.leslie3d	<b>204</b>	<b>46.1</b>	204	46.1	203	46.3	<b>204</b>	<b>46.1</b>	204	46.1	203	46.3
444.namd	<b>879</b>	<b>9.13</b>	878	9.13	879	9.13	864	9.28	<b>864</b>	<b>9.28</b>	864	9.28
447.dealII	721	15.9	<b>720</b>	<b>15.9</b>	719	15.9	721	15.9	<b>720</b>	<b>15.9</b>	719	15.9
450.soplex	638	13.1	627	13.3	<b>634</b>	<b>13.2</b>	638	13.1	627	13.3	<b>634</b>	<b>13.2</b>
453.povray	400	13.3	398	13.4	<b>400</b>	<b>13.3</b>	365	14.6	<b>365</b>	<b>14.6</b>	365	14.6
454.calculix	681	12.1	<b>682</b>	<b>12.1</b>	683	12.1	679	12.2	<b>680</b>	<b>12.1</b>	680	12.1
459.GemsFDTD	266	39.9	<b>267</b>	<b>39.7</b>	268	39.6	263	40.3	<b>263</b>	<b>40.4</b>	262	40.5
465.tonto	827	11.9	826	11.9	<b>826</b>	<b>11.9</b>	<b>828</b>	<b>11.9</b>	827	11.9	828	11.9
470.lbm	240	57.1	241	56.9	<b>241</b>	<b>57.1</b>	240	57.1	241	56.9	<b>241</b>	<b>57.1</b>
481.wrf	347	32.2	<b>350</b>	<b>31.9</b>	352	31.8	347	32.2	<b>350</b>	<b>31.9</b>	352	31.8
482.sphinx3	1093	17.8	1104	17.7	<b>1102</b>	<b>17.7</b>	1060	18.4	1054	18.5	<b>1056</b>	<b>18.5</b>

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 /home/cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost Thu Jun 5 06:21:59 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>

From /proc/cpuinfo  
model name : Intel(R) Atom(TM) CPU C2750 @ 2.40GHz  
Continued on next page



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**Software Availability:** Sep-2013

## Platform Notes (Continued)

```

1 "physical id"s (chips)
8 "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
cache size : 1024 KB

From /proc/meminfo
MemTotal:      32866396 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 3 02:47

SPEC is set to: /home/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_home
                ext4      210G  35G  165G  18% /home

Additional information from dmidecode:
BIOS American Megatrends Inc. 1.0c 02/27/2014
Memory:
4x      8 GB
2x Samsung M474B1G73BH0-YK0 8 GB 1600 MHz 1 rank
2x Samsung M474B1G73BH0-YK0 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)
System has 4x 8GB Samsung DIMMs installed.
Memory info from dmidecode is displayed incorrectly.
All four DIMMs should be 'Samsung M474B1G73BH0-YK0 8 GB 1600 MHz 2 rank'

```

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"  
OMP\_NUM\_THREADS = "8"

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## 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:

-xATOM\_SSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-ansi-alias

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## Base Optimization Flags (Continued)

C++ benchmarks:

`-xATOM_SSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xATOM_SSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xATOM_SSE4.2 -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: -xATOM_SSE4.2(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: -xATOM_SSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel`

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## Peak Optimization Flags (Continued)

### C++ benchmarks:

444.namd: -xATOM\_SSE4.2(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: -xATOM\_SSE4.2(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: -xATOM\_SSE4.2(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: -xATOM\_SSE4.2(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: -xATOM\_SSE4.2(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: -xATOM\_SSE4.2 -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/Supermicro-Platform-Settings-V1.2-revD.html>  
<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revC.html>



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

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

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

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Wed Aug 13 10:41:38 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 13 August 2014.