SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

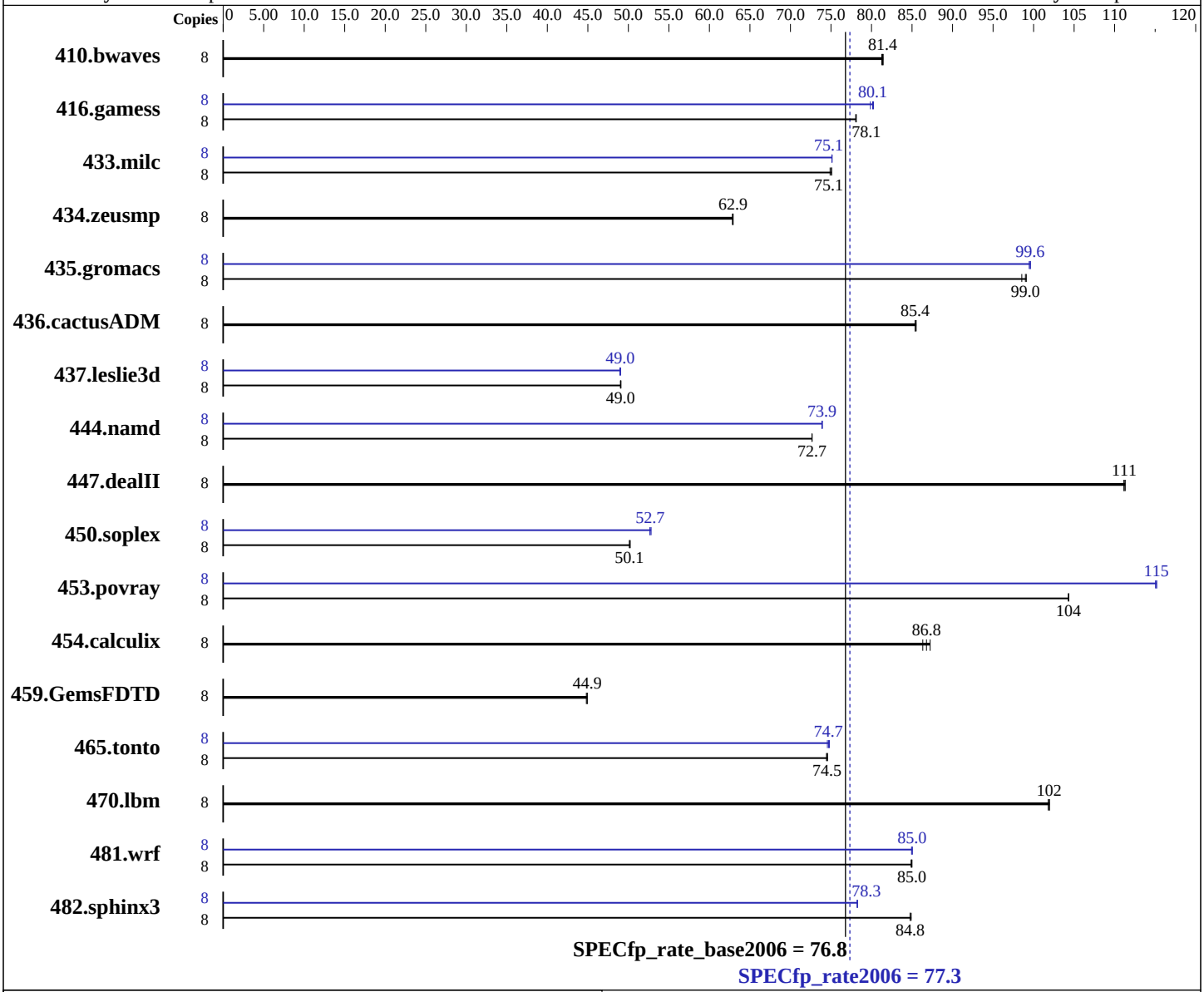
(A1SAi-2750F , Intel Atom C2750)

SPECfp®_rate2006 = 77.3

SPECfp_rate_base2006 = 76.8

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

Continued on next page

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:	No
File System:	ext4

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(A1SAi-2750F , Intel Atom C2750)

SPECfp_rate2006 = 77.3

SPECfp_rate_base2006 = 76.8

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Jun-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1335	81.4	1338	81.3	**1336**	**81.4**	8	1335	81.4	1338	81.3	**1336**	**81.4**
416.gamess	8	**2006**	**78.1**	2005	78.1	2007	78.0	8	1952	80.2	1961	79.9	**1955**	**80.1**
433.milc	8	981	74.9	**978**	**75.1**	978	75.1	8	978	75.1	977	75.1	**978**	**75.1**
434.zeusmp	8	1159	62.8	1157	62.9	**1157**	**62.9**	8	1159	62.8	1157	62.9	**1157**	**62.9**
435.gromacs	8	**577**	**99.0**	576	99.1	580	98.5	8	573	99.6	574	99.5	**574**	**99.6**
436.cactusADM	8	**1119**	**85.4**	1118	85.5	1120	85.4	8	**1119**	**85.4**	1118	85.5	1120	85.4
437.leslie3d	8	**1533**	**49.0**	1532	49.1	1534	49.0	8	1533	49.0	**1535**	**49.0**	1536	48.9
444.namd	8	**883**	**72.7**	883	72.6	883	72.7	8	**868**	**73.9**	868	73.9	868	73.9
447.dealII	8	823	111	**823**	**111**	822	111	8	823	111	**823**	**111**	822	111
450.soplex	8	1331	50.1	**1331**	**50.1**	1328	50.2	8	**1266**	**52.7**	1263	52.8	1267	52.7
453.povray	8	408	104	**408**	**104**	408	104	8	370	115	**370**	**115**	370	115
454.calculix	8	757	87.2	765	86.3	**761**	**86.8**	8	757	87.2	765	86.3	**761**	**86.8**
459.GemsFDTD	8	1894	44.8	1890	44.9	**1890**	**44.9**	8	1894	44.8	1890	44.9	**1890**	**44.9**
465.tonto	8	1057	74.4	1056	74.6	**1056**	**74.5**	8	**1054**	**74.7**	1056	74.6	1052	74.8
470.lbm	8	1078	102	**1078**	**102**	1080	102	8	1078	102	**1078**	**102**	1080	102
481.wrf	8	1051	85.0	**1052**	**85.0**	1053	84.9	8	1052	84.9	1051	85.0	**1051**	**85.0**
482.sphinx3	8	**1839**	**84.8**	1837	84.9	1840	84.8	8	**1992**	**78.3**	1992	78.3	1993	78.2

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The config file option 'submit' was used.
```

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 Tue Jun  3 20:22:15 2014

This section contains SUT (System Under Test) info as seen by
```

Continued on next page

Platform Notes (Continued)

```
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
      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"

 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
```

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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:
`-xATOM_SSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias -opt-mem-layout-trans=3`

Fortran benchmarks:
`-xATOM_SSE4.2 -ipo -O3 -no-prec-div -opt-prefetch`

Benchmarks using both Fortran and C:
`-xATOM_SSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias -opt-mem-layout-trans=3`

Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

Peak 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`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`

Continued on next page

Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

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)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xATOM_SSE4.2 -ipo -O3 -no-prec-div
-opt-mem-layout-trans=3 -unroll2

C++ benchmarks:

444.namd: -xATOM_SSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xATOM_SSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xATOM_SSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(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

Continued on next page

Peak Optimization Flags (Continued)

437.leslie3d: -xATOM_SSE4.2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

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) -unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xATOM_SSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xATOM_SSE4.2 -ipo -O3 -no-prec-div -auto-ilp32

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

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

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 Wed Aug 13 10:41:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 13 August 2014.