SPEC® CFP2006 Result
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Intel Corporation

Supermicro SuperServer 7046A-T (Intel Xeon X5680, 3.33 GHz)

$SPECfp^{®}2006 = $ 41.9
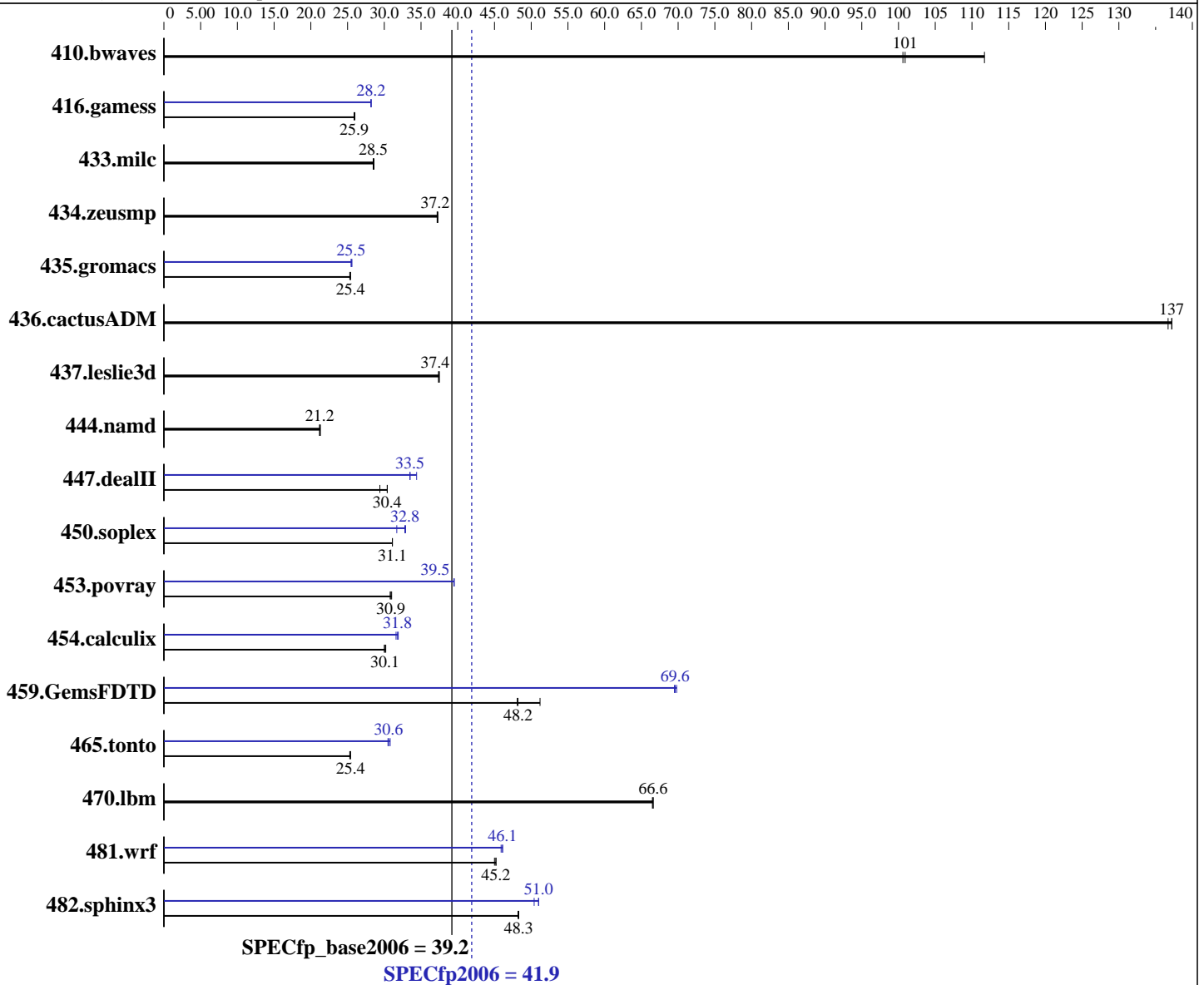
$SPECfp_base2006 = $ 39.2

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Mar-2010
Hardware Availability: Mar-2010
Software Availability: Nov-2009

Benchmark	Result
410.bwaves	101
416.gamess	28.2 / 25.9
433.milc	28.5
434.zeusmp	37.2
435.gromacs	25.5 / 25.4
436.cactusADM	137
437.leslie3d	37.4
444.namd	21.2
447.dealII	33.5 / 30.4
450.soplex	32.8 / 31.1
453.povray	39.5 / 30.9
454.calculix	31.8 / 30.1
459.GemsFDTD	69.6 / 48.2
465.tonto	30.6 / 25.4
470.lbm	66.6
481.wrf	46.1 / 45.2
482.sphinx3	51.0 / 48.3

SPECfp_base2006 = 39.2
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Hardware
CPU Name: Intel Xeon X5680
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 3333
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
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

Continued on next page

Software
Operating System: Windows 7 Enterprise (64-bit)
Compiler: Intel C++ Compiler Professional 11.1 for Intel 64
Build 20090903 Package ID: w_cproc_p_11.1.045
Intel Visual Fortran Compiler Professional 11.1 for Intel 64
Build 20090903 Package ID: w_cproc_p_11.1.045, w_cprof_p_11.1.045
Microsoft Visual Studio 2008 Professional SP1 (for libraries)
Auto Parallel: Yes

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L3 Cache:	12 MB I+D on chip per chip	File System:	NTFS
Other Cache:	None	System State:	Default
Memory:	24 GB (6x 4GB DDR3-1333, ECC, CL9)	Base Pointers:	64-bit
Disk Subsystem:	1 x 300 GB SATA, 10000 RPM	Peak Pointers:	64-bit
Other Hardware:	None	Other Software:	SmartHeap Library Version 8.1 from http://www.microquill.com/

Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	122	112	**135**	**101**	135	101	122	112	**135**	**101**	135	101
416.gamess	753	26.0	757	25.9	**755**	**25.9**	**695**	**28.2**	694	28.2	695	28.2
433.milc	322	28.6	**323**	**28.5**	323	28.5	322	28.6	**323**	**28.5**	323	28.5
434.zeusmp	245	37.2	244	37.3	**244**	**37.2**	245	37.2	244	37.3	**244**	**37.2**
435.gromacs	282	25.3	282	25.4	**282**	**25.4**	**280**	**25.5**	280	25.5	279	25.6
436.cactusADM	87.4	137	87.1	137	**87.1**	**137**	87.4	137	87.1	137	**87.1**	**137**
437.leslie3d	251	37.5	251	37.4	**251**	**37.4**	251	37.5	251	37.4	**251**	**37.4**
444.namd	378	21.2	377	21.3	**378**	**21.2**	378	21.2	377	21.3	**378**	**21.2**
447.dealII	377	30.4	389	29.4	**377**	**30.4**	333	34.4	**341**	**33.5**	341	33.5
450.soplex	269	31.1	**268**	**31.1**	268	31.1	263	31.7	254	32.9	**254**	**32.8**
453.povray	172	31.0	**172**	**30.9**	173	30.8	135	39.5	**135**	**39.5**	135	39.5
454.calculix	**274**	**30.1**	275	30.0	273	30.2	259	31.9	**259**	**31.8**	261	31.6
459.GemsFDTD	221	48.1	207	51.2	**220**	**48.2**	153	69.5	152	69.8	**153**	**69.6**
465.tonto	388	25.3	387	25.4	**388**	**25.4**	**322**	**30.6**	320	30.8	322	30.5
470.lbm	206	66.6	**206**	**66.6**	207	66.5	206	66.6	**206**	**66.6**	207	66.5
481.wrf	**247**	**45.2**	247	45.2	248	45.0	242	46.1	243	45.9	**242**	**46.1**
482.sphinx3	**403**	**48.3**	404	48.2	403	48.3	**383**	**51.0**	387	50.4	382	51.0

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

General Notes

```
Tested systems is used with tower case,
PC Power and Cooling dual 865W power supplys
OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
System was configured with nVidia Quadro FX 370 discrete graphics card
```

Base Compiler Invocation

C benchmarks:
```
icl -Qvc9 -Qstd=c99
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
```
icl -Qvc9
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc9 -Qstd=c99 ifort
```

Base Portability Flags

```
   410.bwaves: -DSPEC_CPU_P64 /Qlowercase
   416.gamess: -DSPEC_CPU_P64
     433.milc: -DSPEC_CPU_P64
   434.zeusmp: -DSPEC_CPU_P64
   435.gromacs: -DSPEC_CPU_P64
 436.cactusADM: -DSPEC_CPU_P64 -Qlowercase /assume:underscore
  437.leslie3d: -DSPEC_CPU_P64
     444.namd: -DSPEC_CPU_P64 /TP
    447.dealII: -DSPEC_CPU_P64 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
   450.soplex: -DSPEC_CPU_P64
   453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
  454.calculix: -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -Qlowercase
 459.GemsFDTD: -DSPEC_CPU_P64
    465.tonto: -DSPEC_CPU_P64
     470.lbm: -DSPEC_CPU_P64
      481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
  482.sphinx3: -DSPEC_CPU_P64
```

Base Optimization Flags

C benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
-Qauto-ilp32 /F1000000000
```

C++ benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib
        -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
/F1000000000
```

Benchmarks using both Fortran and C:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
-Qauto-ilp32 /F1000000000
```

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Peak Compiler Invocation

C benchmarks:
```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc9
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc9 -Qstd=c99 ifort
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

```
   433.milc: basepeak = yes

   470.lbm: basepeak = yes

482.sphinx3: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qprec-div- -Qunroll2 -Qauto-ilp32 /F1000000000
```

C++ benchmarks:

```
   444.namd: basepeak = yes

  447.dealII: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch
             -Qansi-alias -Qscalar-rep- -Qauto-ilp32 /F1000000000
             shlW64M.lib          -link /FORCE:MULTIPLE

  450.soplex: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
                     -link /FORCE:MULTIPLE

  453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32
             /F1000000000 shlW64M.lib          -link /FORCE:MULTIPLE
```

Fortran benchmarks:

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Peak Optimization Flags (Continued)

```
410.bwaves: basepeak = yes

416.gamess: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
            -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias
            -Qscalar-rep- /F1000000000

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
              -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel
              /F1000000000

465.tonto: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
           -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto -Qinline-calloc
           /F1000000000
```

Benchmarks using both Fortran and C:

```
435.gromacs: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
             /F1000000000

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F1000000000

481.wrf: Same as 454.calculix
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.20100302.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.20100302.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 08:07:21 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 4 May 2010.