SPEC® CFP2006 Result

Intel Corporation

Intel DH61WW motherboard (Intel Celeron G540)

$SPECfp®2006 =$ 24.1

$SPECfp\_base2006 =$ 21.5

Results chart (scale 0 to 54.0):

- **410.bwaves** — 44.2
- **416.gamess** — 24.9 / 11.1
- **433.milc** — 41.4
- **434.zeusmp** — 29.3
- **435.gromacs** — 17.9
- **436.cactusADM** — 28.4 / 28.6
- **437.leslie3d** — 24.5
- **444.namd** — 17.0 / 16.7
- **447.dealII** — 27.6
- **450.soplex** — 22.7
- **453.povray** — 36.7 / 29.9
- **454.calculix** — 20.5
- **459.GemsFDTD** — 23.3 / 23.8
- **465.tonto** — 22.4 / 8.90
- **470.lbm** — 53.4
- **481.wrf** — 5.90
- **482.sphinx3** — 14.2

SPECfp_base2006 = 21.5

SPECfp2006 = 24.1

Hardware

CPU Name:	Intel Celeron G540
CPU Characteristics:	
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1 chip
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 Ultimate (64-bit)
Compiler:	Fortran: Version 12.0.3.176 of Intel Fortran Studio XE for Windows; Libraries: Version 15.00.30729.01 of Microsoft Visual Studio 2008 Professional SP1
Auto Parallel:	Yes
File System:	NTFS
System State:	Default

Continued on next page

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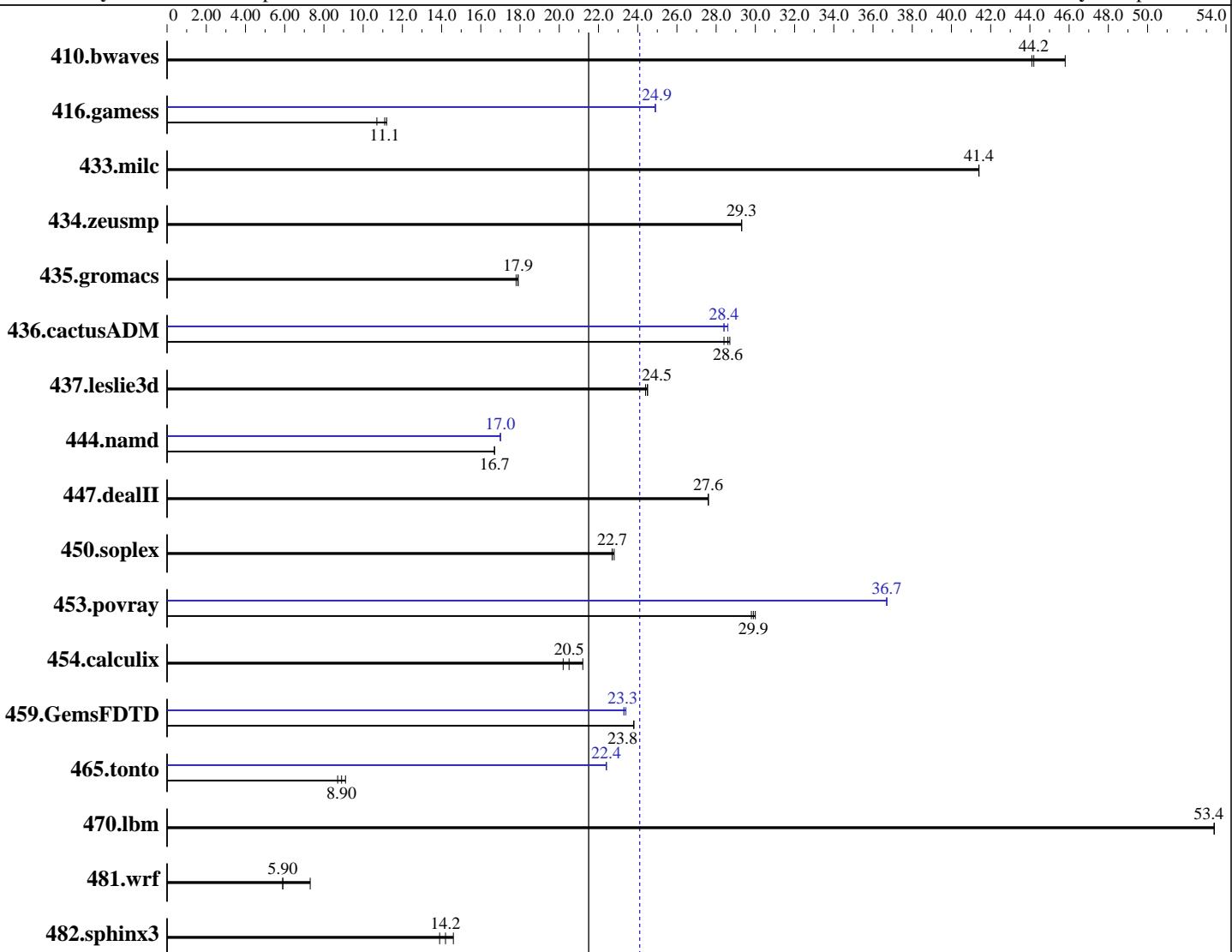| SPECfp2006 =	24.1
SPECfp_base2006 =	21.5

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

Test date: Oct-2011
Hardware Availability: Sep-2011
Software Availability: Apr-2011

L3 Cache:	2 MB I+D on chip per chip
Other Cache:	None
Memory:	2 GB (2 x 1 GB 2Rx4 PC3-10600U-9, running at 1066 MHz)
Disk Subsystem:	1 TB Seagate SATA, 7200 RPM
Other Hardware:	None

Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap Library Version 9.01 from http://www.microquill.com/

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	297	45.8	**308**	**44.2**	308	44.1	297	45.8	**308**	**44.2**	308	44.1
416.gamess	1831	10.7	1754	11.2	**1760**	**11.1**	**786**	**24.9**	787	24.9	786	24.9
433.milc	**222**	**41.4**	222	41.4	222	41.4	**222**	**41.4**	222	41.4	222	41.4
434.zeusmp	311	29.3	**311**	**29.3**	310	29.3	311	29.3	**311**	**29.3**	310	29.3
435.gromacs	**400**	**17.9**	398	17.9	400	17.8	**400**	**17.9**	398	17.9	400	17.8
436.cactusADM	421	28.4	417	28.7	**418**	**28.6**	421	28.4	**421**	**28.4**	419	28.6
437.leslie3d	383	24.5	385	24.4	**384**	**24.5**	383	24.5	385	24.4	**384**	**24.5**
444.namd	480	16.7	**480**	**16.7**	480	16.7	472	17.0	**472**	**17.0**	472	17.0
447.dealII	414	27.6	**414**	**27.6**	415	27.6	414	27.6	**414**	**27.6**	415	27.6
450.soplex	**367**	**22.7**	367	22.7	367	22.8	**367**	**22.7**	367	22.7	367	22.8
453.povray	**178**	**29.9**	177	30.0	178	29.8	145	36.7	145	36.7	**145**	**36.7**
454.calculix	409	20.2	389	21.2	**402**	**20.5**	409	20.2	389	21.2	**402**	**20.5**
459.GemsFDTD	445	23.8	446	23.8	**445**	**23.8**	455	23.3	453	23.4	**455**	**23.3**
465.tonto	**1107**	**8.90**	1078	9.10	1132	8.70	**440**	**22.4**	439	22.4	440	22.4
470.lbm	**257**	**53.4**	257	53.4	257	53.4	**257**	**53.4**	257	53.4	257	53.4
481.wrf	**1908**	**5.90**	1530	7.30	1909	5.90	**1908**	**5.90**	1530	7.30	1909	5.90
482.sphinx3	**1372**	**14.2**	1331	14.6	1398	13.9	**1372**	**14.2**	1331	14.6	1398	13.9

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

Component Notes

```
    Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
```

General Notes

```
    Binaries compiled on a system with 1x Intel Core i7-860 CPU
+ 8GB memory using Windows 7 Enterprise 64-bit
OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
```

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Hardware Availability: Sep-2011
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Base 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
```

Base Portability Flags

```
    410.bwaves: -DSPEC_CPU_P64 -names:lowercase
    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 -names:lowercase /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 -names:lowercase
  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 -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000
```

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

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

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Base Optimization Flags (Continued)

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

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: basepeak = yes
```

C++ benchmarks:

```
    444.namd: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
              -Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000
              shlW64M.lib              -link /FORCE:MULTIPLE

    447.dealII: basepeak = yes

    450.soplex: basepeak = yes

    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
```

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Peak Optimization Flags (Continued)

Fortran benchmarks:

    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: basepeak = yes

  436.cactusADM: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
              -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qunroll2
              -Qauto-ilp32 /F1000000000

    454.calculix: basepeak = yes

        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-ic12-winx64-revC.20111012.html
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.20111012.xml
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings-revC.xml

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