SPEC® CFP2006 Result
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Intel Corporation

Intel DH61WW motherboard (Intel Pentium G840)

$SPECfp®2006 =$ 35.9
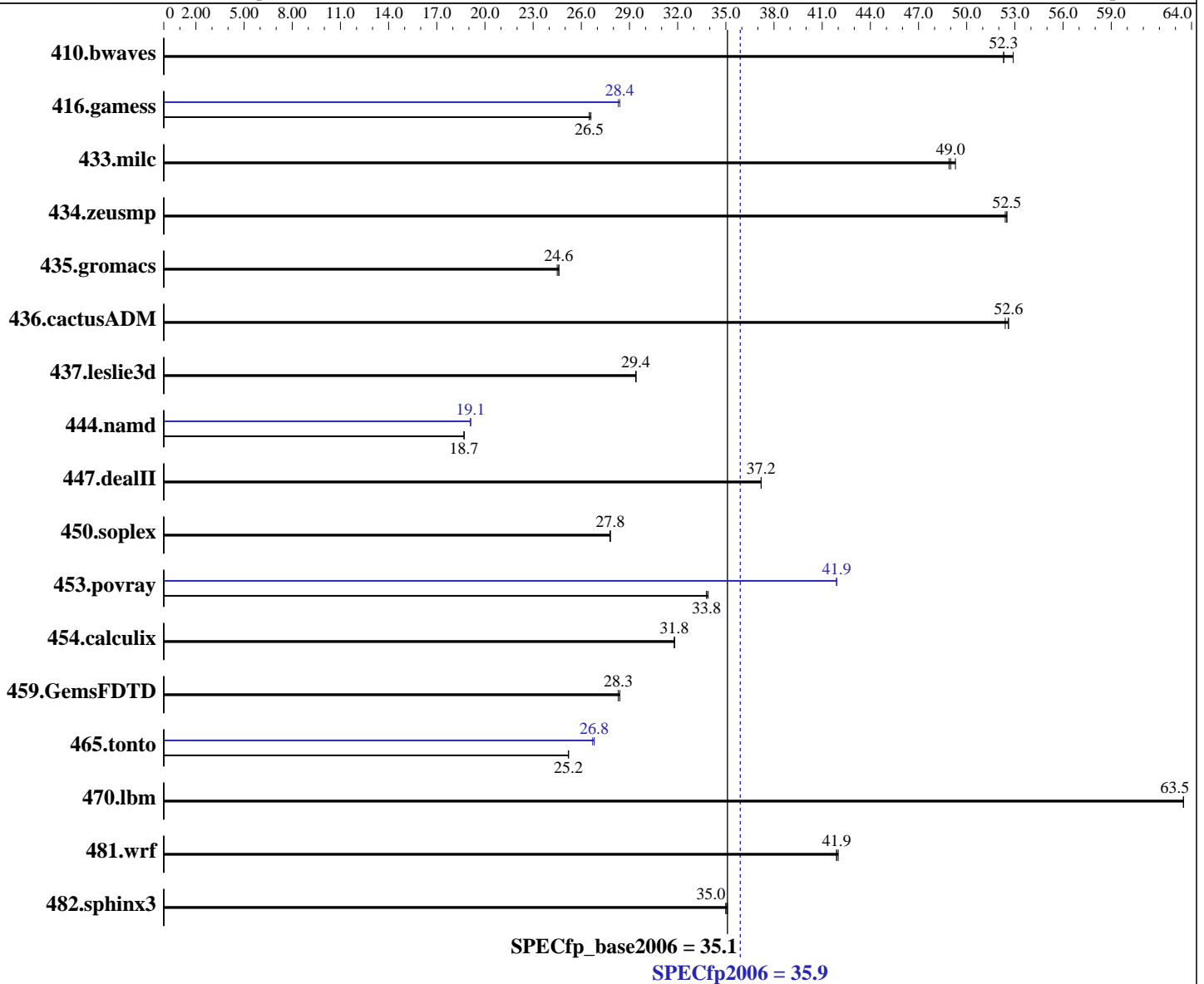
$SPECfp\_base2006 =$ 35.1

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

Test date: Dec-2011
Hardware Availability: May-2011
Software Availability: Sep-2011

Benchmark results (SPECfp scale 0 to 64.0):

Benchmark	Base	Peak
410.bwaves	52.3	
416.gamess	26.5	28.4
433.milc	49.0	
434.zeusmp	52.5	
435.gromacs	24.6	
436.cactusADM	52.6	
437.leslie3d	29.4	
444.namd	18.7	19.1
447.dealII	37.2	
450.soplex	27.8	
453.povray	33.8	41.9
454.calculix	31.8	
459.GemsFDTD	28.3	
465.tonto	25.2	26.8
470.lbm	63.5	
481.wrf	41.9	
482.sphinx3	35.0	

SPECfp_base2006 = 35.1
SPECfp2006 = 35.9

Hardware
CPU Name: Intel Pentium G840
CPU Characteristics:
CPU MHz: 2800
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: Microsoft Windows 7 Ultimate
6.1.7601 Service Pack 1 Build 7601
Compiler: C/C++: Version 12.1.0.229 of Intel C++ Studio XE
for Windows;
Fortran: Version 12.1.0.229 of Intel Fortran
Studio XE for Windows;
Libraries: Version 15.00.30729.01 of Microsoft
Visual Studio 2008 Professional SP1
Auto Parallel: Yes
Continued on next page

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L3 Cache:	3 MB I+D on chip per chip	File System:	NTFS
Other Cache:	None	System State:	Default
Memory:	2 GB (2 x 1 GB 1Rx16 PC3-10600U-9)	Base Pointers:	32/64-bit
Disk Subsystem:	1 TB Seagate SATA, 7200 RPM	Peak Pointers:	32/64-bit
Other Hardware:	None	Other Software:	SmartHeap Library Version 9.01 from http://www.microquill.com/

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	257	52.9	260	52.3	**260**	**52.3**	257	52.9	260	52.3	**260**	**52.3**
416.gamess	738	26.5	**738**	**26.5**	737	26.6	690	28.4	691	28.3	**691**	**28.4**
433.milc	186	49.3	**188**	**49.0**	188	48.9	186	49.3	**188**	**49.0**	188	48.9
434.zeusmp	173	52.5	174	52.4	**173**	**52.5**	173	52.5	174	52.4	**173**	**52.5**
435.gromacs	291	24.5	**291**	**24.6**	291	24.6	291	24.5	**291**	**24.6**	291	24.6
436.cactusADM	227	52.6	**227**	**52.6**	228	52.4	227	52.6	**227**	**52.6**	228	52.4
437.leslie3d	**320**	**29.4**	319	29.4	320	29.4	**320**	**29.4**	319	29.4	320	29.4
444.namd	428	18.7	**428**	**18.7**	428	18.7	420	19.1	**420**	**19.1**	420	19.1
447.dealII	**308**	**37.2**	308	37.2	308	37.2	**308**	**37.2**	308	37.2	308	37.2
450.soplex	300	27.8	**300**	**27.8**	300	27.8	300	27.8	**300**	**27.8**	300	27.8
453.povray	**157**	**33.8**	157	33.9	158	33.8	127	41.9	**127**	**41.9**	127	41.9
454.calculix	259	31.8	**260**	**31.8**	260	31.8	259	31.8	**260**	**31.8**	260	31.8
459.GemsFDTD	**374**	**28.3**	374	28.4	375	28.3	**374**	**28.3**	374	28.4	375	28.3
465.tonto	**390**	**25.2**	390	25.2	390	25.2	368	26.7	**368**	**26.8**	368	26.8
470.lbm	216	63.5	**216**	**63.5**	217	63.5	216	63.5	**216**	**63.5**	217	63.5
481.wrf	266	42.0	**266**	**41.9**	267	41.9	266	42.0	**266**	**41.9**	267	41.9
482.sphinx3	557	35.0	556	35.1	**557**	**35.0**	557	35.0	556	35.1	**557**	**35.0**

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

Compiler Invocation Notes

```
ipsxe-comp-vars batch file invoked with intel64
```

Platform Notes

```
Sysinfo program C:\SPEC12.1/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on CltE06995A30C92 Thu Dec 22 13:07:59 2011

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

Trying 'systeminfo'
```

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Platform Notes (Continued)

```
OS Name        : Microsoft Windows 7 Ultimate
OS Version     : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: INTEL_
System Model   : DH61WW__
Processor(s)   : 1 Processor(s) Installed.
    [01]: Intel64 Family 6 Model 42 Stepping 7 GenuineIntel ~2800 Mhz
BIOS Version   : Intel Corp. BEH6110H.86A.0016.2011.0118.1128, 1/18/2011
Total Physical Memory: 1,956 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
L2CacheSize   : 512
L3CacheSize   : 3072
MaxClockSpeed : 2800
Name          : Intel(R) Pentium(R) CPU G840 @ 2.80GHz
NumberOfCores : 2
NumberOfLogicalProcessors: 2

(End of data from sysinfo program)
```

Component Notes

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

General Notes

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

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
```

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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
```

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
```

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Test date: Dec-2011
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Software Availability: Sep-2011

Peak Compiler Invocation (Continued)

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

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

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Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

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: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-windows.20120117.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-windows.20120117.xml

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

Tested with SPEC CPU2006 v1.2.
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