SPEC® CFP2006 Result
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Intel Corporation

Intel DQ87PG motherboard (Intel Celeron G1820)

$SPECfp®\_rate2006 =$ 62.7

$SPECfp\_rate\_base2006 =$ 62.1
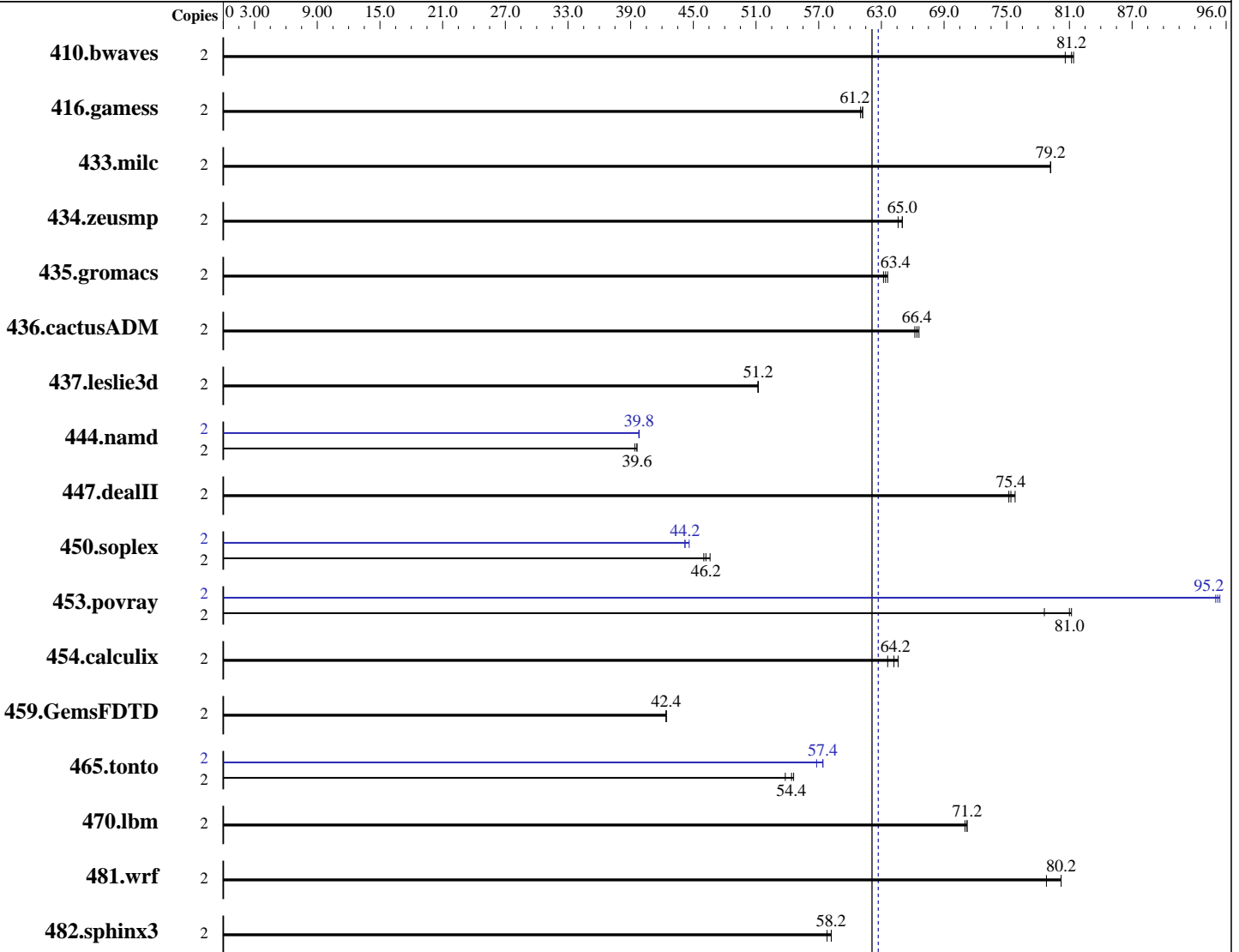
CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Feb-2014
Hardware Availability: Dec-2013
Software Availability: Apr-2013

	Copies	
410.bwaves	2	81.2
416.gamess	2	61.2
433.milc	2	79.2
434.zeusmp	2	65.0
435.gromacs	2	63.4
436.cactusADM	2	66.4
437.leslie3d	2	51.2
444.namd	2 / 2	39.8 / 39.6
447.dealII	2	75.4
450.soplex	2 / 2	44.2 / 46.2
453.povray	2 / 2	95.2 / 81.0
454.calculix	2	64.2
459.GemsFDTD	2	42.4
465.tonto	2 / 2	57.4 / 54.4
470.lbm	2	71.2
481.wrf	2	80.2
482.sphinx3	2	58.2

SPECfp_rate_base2006 = 62.1

SPECfp_rate2006 = 62.7

Hardware

CPU Name: Intel Celeron G1820
CPU Characteristics:
CPU MHz: 2700
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 Enterprise
6.1.7601 Service Pack 1 Build 7601
Compiler: C/C++: Version 13.1.1.171 of Intel C++ Studio XE
for Windows;
Fortran: Version 13.1.1.171 of Intel Fortran
Studio XE for Windows;
Libraries: Version 16.00.30319.01 of Microsoft
Visual Studio 2010 Professional SP1
Auto Parallel: No

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L3 Cache:	2 MB I+D on chip per chip
Other Cache:	None
Memory:	4 GB (2 x 2 GB 1Rx8 PC3-12800U-11, running at 1333 MHz and CL9)
Disk Subsystem:	250 GB Seagate SATA HDD, 7200 RPM
Other Hardware:	None

File System:	NTFS
System State:	Default
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap Library Version 10.0 from http://www.microquill.com/

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	**334**	**81.2**	334	81.4	337	80.6	2	**334**	**81.2**	334	81.4	337	80.6
416.gamess	2	640	61.2	**640**	**61.2**	641	61.0	2	640	61.2	**640**	**61.2**	641	61.0
433.milc	2	**232**	**79.2**	232	79.2	232	79.2	2	**232**	**79.2**	232	79.2	232	79.2
434.zeusmp	2	**280**	**65.0**	280	65.0	281	64.6	2	**280**	**65.0**	280	65.0	281	64.6
435.gromacs	2	226	63.2	**225**	**63.4**	225	63.6	2	226	63.2	**225**	**63.4**	225	63.6
436.cactusADM	2	362	66.2	359	66.6	**360**	**66.4**	2	362	66.2	359	66.6	**360**	**66.4**
437.leslie3d	2	**368**	**51.2**	368	51.2	368	51.2	2	**368**	**51.2**	368	51.2	368	51.2
444.namd	2	406	39.6	**406**	**39.6**	406	39.4	2	403	39.8	402	39.8	**402**	**39.8**
447.dealII	2	304	75.2	302	75.8	**304**	**75.4**	2	304	75.2	302	75.8	**304**	**75.4**
450.soplex	2	**361**	**46.2**	358	46.6	362	46.0	2	**377**	**44.2**	373	44.6	378	44.2
453.povray	2	136	78.6	131	81.2	**131**	**81.0**	2	112	95.0	**112**	**95.2**	112	95.4
454.calculix	2	259	63.6	255	64.6	**257**	**64.2**	2	259	63.6	255	64.6	**257**	**64.2**
459.GemsFDTD	2	501	42.4	500	42.4	**500**	**42.4**	2	501	42.4	500	42.4	**500**	**42.4**
465.tonto	2	**361**	**54.4**	365	53.8	361	54.6	2	**343**	**57.4**	346	56.8	342	57.4
470.lbm	2	387	71.0	386	71.2	**386**	**71.2**	2	387	71.0	386	71.2	**386**	**71.2**
481.wrf	2	284	78.8	**279**	**80.2**	279	80.2	2	284	78.8	**279**	**80.2**	279	80.2
482.sphinx3	2	674	57.8	**670**	**58.2**	669	58.2	2	674	57.8	**670**	**58.2**	669	58.2

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

Compiler Invocation Notes

```
To compile these binaries, the Intel Compiler 13.1 was set up to
generate 64-bit binaries with the command:
"ipsxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r)
Parallel Studio XE 2013 program folder)
```

Submit Notes

```
Processes were bound to specific processors using the start command with the /affinity switch.
The config file option 'submit' was used to generate the affinity mask for each process.
```

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Platform Notes

```
Sysinfo program C:\SPEC13.1/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt00224D4FB715 Thu Feb 13 02:56:56 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

Trying 'systeminfo'
OS Name        : Microsoft Windows 7 Enterprise
OS Version     : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: INTEL_
System Model   : DQ87PG__
Processor(s)   : 1 Processor(s) Installed.
    [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~2700 Mhz
BIOS Version   : Intel(R) Corp. PGQ8710H.86A.0036.2013.0702.1908, 7/2/2013
Total Physical Memory: 3,749 MB

Trying 'wmic cpu get /value'
DeviceID       : CPU0
L2CacheSize    : 512
L3CacheSize    : 2048
MaxClockSpeed  : 2700
Name           : Intel(R) Celeron(R) CPU G1820 @ 2.70GHz
NumberOfCores  : 2
NumberOfLogicalProcessors: 2

 (End of data from sysinfo program)
BIOS: SATA mode set to RAID
Windows Disk Driver: Intel Rapid Storage Technology 12.5.0.1066
Windows Chipset Driver: Intel Chipset Driver 9.4.0.1027
```

Component Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
Micron MT8JTF25664AZ-1G6 Series Memory DIMMs
```

General Notes

```
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 -Qvc10 -Qstd=c99
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
```
icl -Qvc10
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc10 -Qstd=c99 ifort
```

Base Portability Flags

```
  410.bwaves: -DSPEC_CPU_P64
  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
             -Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros
  450.soplex: -DSPEC_CPU_P64
  453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP
  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- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000            -link /FORCE:MULTIPLE
```

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

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

Continued on next page

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Base Optimization Flags (Continued)

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

Peak Compiler Invocation

C benchmarks:
```
icl -Qvc10 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc10
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc10 -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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
         -Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
            -link /FORCE:MULTIPLE

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Peak Optimization Flags (Continued)

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

Fortran benchmarks:

```
    410.bwaves: basepeak = yes

    416.gamess: basepeak = yes

    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

 459.GemsFDTD: basepeak = yes

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

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-ic13.1-official-windows.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic13.1-official-windows.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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