



# SPEC<sup>®</sup> CFP2006 Result

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## Dell Inc.

Dell Precision M3800 (Intel(R) Core(R) i7-4702HQ, 2.20 GHz)

SPECfp<sup>®</sup>\_rate2006 = 113

SPECfp\_rate\_base2006 = 109

CPU2006 license: 55

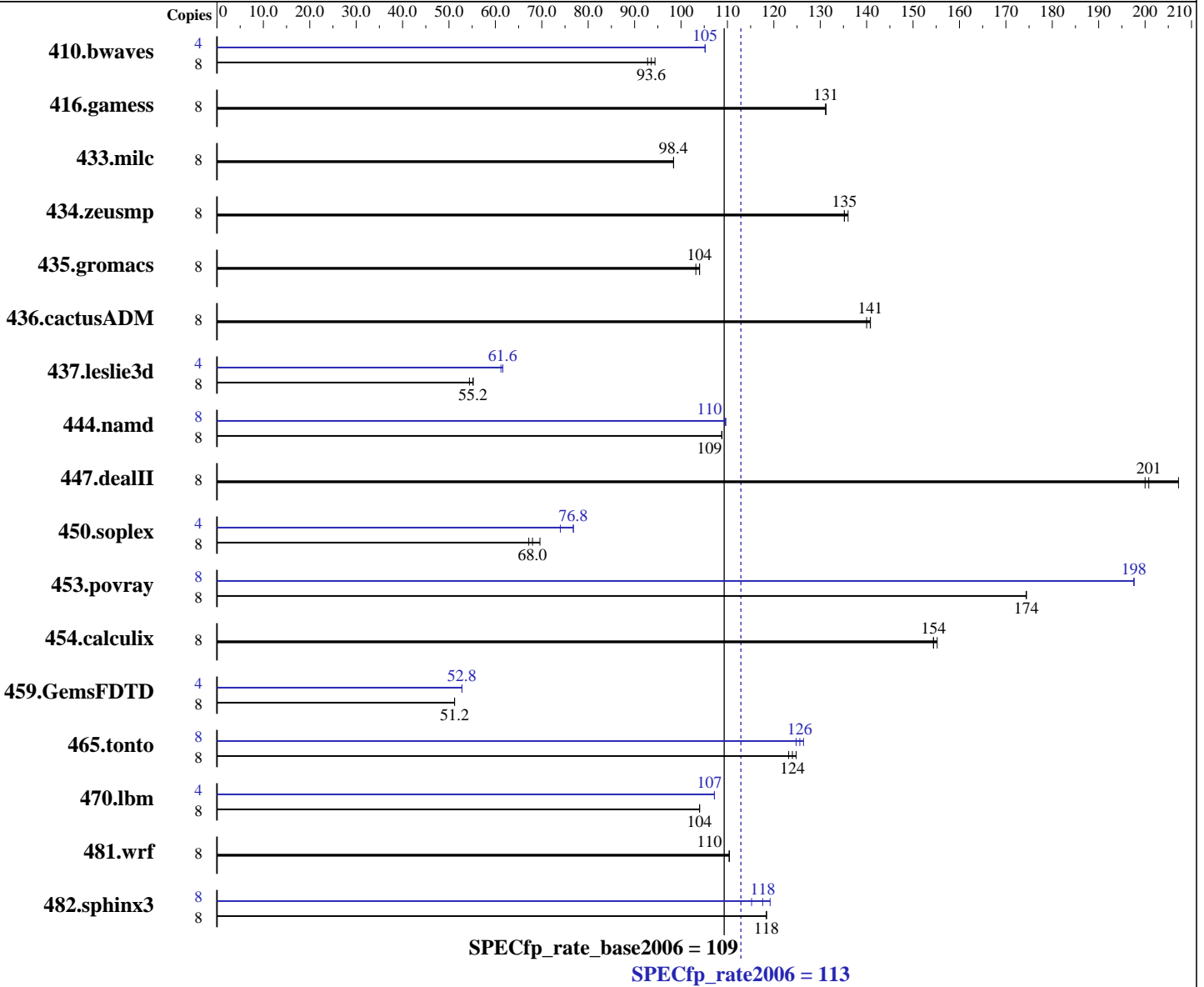
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2013

Hardware Availability: Nov-2013

Software Availability: Aug-2011



### Hardware

CPU Name: Intel Core i7-4702HQ  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 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

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### Software

Operating System: Windows 7 Professional (64-bit) SP1  
 Compiler: C/C++: Version 12.1.0.233 of Intel C++ Studio XE for Windows  
 Fortran: Version 12.1.0.233 of Intel Visual Fortran Compiler for Intel64  
 C/C++: Version 2010 of Microsoft Visual Studio  
 Auto Parallel: No  
 File System: NTFS  
 System State: Default

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L3 Cache: 6 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (2 x 8 GB 1Rx8 PC3L-12800U-11)  
Disk Subsystem: 1 x 1 TB SATA III 7200 RPM  
Other Hardware: None

Base Pointers: 32/64-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	<b>1163</b>	<b>93.6</b>	1149	94.4	1168	92.8	4	517	105	<b>517</b>	<b>105</b>	517	105
416.gamess	8	1195	131	1196	131	<b>1196</b>	<b>131</b>	8	1195	131	1196	131	<b>1196</b>	<b>131</b>
433.milc	8	746	98.4	<b>745</b>	<b>98.4</b>	744	98.4	8	746	98.4	<b>745</b>	<b>98.4</b>	744	98.4
434.zeusmp	8	538	135	537	136	<b>538</b>	<b>135</b>	8	538	135	537	136	<b>538</b>	<b>135</b>
435.gromacs	8	<b>551</b>	<b>104</b>	550	104	552	103	8	<b>551</b>	<b>104</b>	550	104	552	103
436.cactusADM	8	684	140	<b>680</b>	<b>141</b>	679	141	8	684	140	<b>680</b>	<b>141</b>	679	141
437.leslie3d	8	<b>1370</b>	<b>55.2</b>	1376	54.4	1368	55.2	4	613	61.2	611	61.6	<b>612</b>	<b>61.6</b>
444.namd	8	588	109	589	109	<b>589</b>	<b>109</b>	8	585	110	<b>584</b>	<b>110</b>	584	110
447.dealII	8	<b>456</b>	<b>201</b>	442	207	457	200	8	<b>456</b>	<b>201</b>	442	207	457	200
450.soplex	8	987	67.2	<b>976</b>	<b>68.0</b>	955	69.6	4	450	74.0	434	76.8	<b>434</b>	<b>76.8</b>
453.povray	8	244	174	<b>244</b>	<b>174</b>	244	174	8	215	198	<b>215</b>	<b>198</b>	215	198
454.calculix	8	<b>427</b>	<b>154</b>	426	155	429	154	8	<b>427</b>	<b>154</b>	426	155	429	154
459.GemsFDTD	8	1661	51.2	1657	51.2	<b>1657</b>	<b>51.2</b>	4	802	52.8	802	52.8	<b>802</b>	<b>52.8</b>
465.tonto	8	632	125	639	123	<b>633</b>	<b>124</b>	8	<b>627</b>	<b>126</b>	624	126	629	125
470.lbm	8	<b>1055</b>	<b>104</b>	1056	104	1055	104	4	513	107	513	107	<b>513</b>	<b>107</b>
481.wrf	8	<b>810</b>	<b>110</b>	810	110	810	110	8	<b>810</b>	<b>110</b>	810	110	810	110
482.sphinx3	8	1320	118	<b>1319</b>	<b>118</b>	1315	118	8	<b>1324</b>	<b>118</b>	1307	119	1350	115

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

Set power configuration to High Performance and disabled monitor blanking and sleep timer

## Platform Notes

Sysinfo program c:\cpu2006.v1.2/Docs/sysinfo  
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
running on M3800-SPEC-PC Tue Nov 19 16:14:56 2013

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

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## Platform Notes (Continued)

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 Professional
OS Version    : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: Dell Inc.
System Model   : Dell Precision M3800
Processor(s)   : 1 Processor(s) Installed.
                [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~2201 Mhz
BIOS Version   : Dell Inc. A00, 10/3/2013
Total Physical Memory: 16,287 MB
```

Trying 'wmic cpu get /value'

```
DeviceID      : CPU0
L2CacheSize   : 1024
L3CacheSize   : 6144
MaxClockSpeed : 2201
Name          : Intel(R) Core(TM) i7-4702HQ CPU @ 2.20GHz
NumberOfCores : 4
NumberOfLogicalProcessors: 8
```

(End of data from sysinfo program)

## General Notes

Binaries were compiled on a Precision T1600 system with a single Xeon E3-1200 CPU and 16GB memory using Windows 7 Professional 64-bit

## Base 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
```

## Base Portability Flags

```
410.bwaves: -DSPEC_CPU_P64 -names:lowercase
```

```
416.gamess: -DSPEC_CPU_P64
```

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[info@spec.org](mailto:info@spec.org)

<http://www.spec.org/>

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## Base Portability Flags (Continued)

```

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_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:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32 /F512000000

C++ benchmarks:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qcxx-features
-Qauto-ilp32 /F512000000 shlw64m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias /F1000000000

Benchmarks using both Fortran and C:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32 /F1000000000

```

## 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

```



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**Hardware Availability:** Nov-2013

**Software Availability:** Aug-2011

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: -QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32  
/F512000000

482.sphinx3: -QxAVX -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias  
-Qauto-ilp32 /F512000000

C++ benchmarks:

444.namd: -Qprof\_gen(pass 1) -QxAVX(pass 2) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Oa -Qauto-ilp32 /F512000000 shlw64m.lib  
-link /FORCE:MULTIPLE

447.dealIII: basepeak = yes

450.soplex: -Qprof\_gen(pass 1) -QxAVX(pass 2) -Qprof\_use(pass 2) -Qipo  
-O3 -Qauto-ilp32 /F512000000 shlw64m.lib  
-link /FORCE:MULTIPLE

453.povray: -Qprof\_gen(pass 1) -QxAVX(pass 2) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F512000000  
shlw64m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias /F1000000000

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: -Qprof\_gen(pass 1) -QxAVX(pass 2) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000

Benchmarks using both Fortran and C:

Continued on next page



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## Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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/Dell-ic12.1-Windows.html>

<http://www.spec.org/cpu2006/flags/Dell-platform-Precision.20131217.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Dell-ic12.1-Windows.xml>

<http://www.spec.org/cpu2006/flags/Dell-platform-Precision.20131217.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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