SPEC® CFP2006 Result

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Dell Inc.

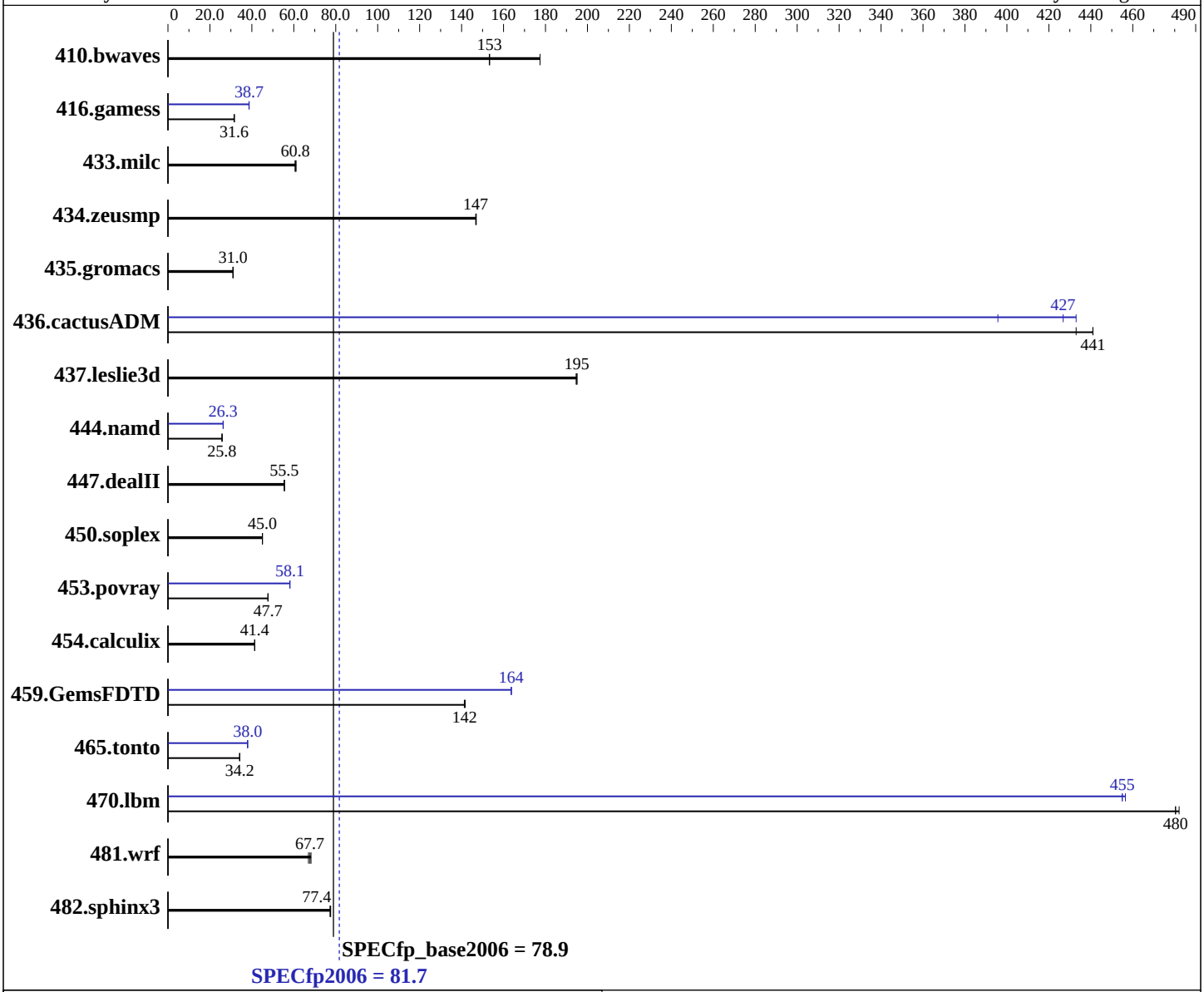
DELL Precision T7600 (Intel Xeon E5-2687W, 3.10GHz)

SPECfp®2006 = 81.7

SPECfp_base2006 = 78.9

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Jan-2013
Hardware Availability: Aug-2012
Software Availability: Aug-2011



Hardware

CPU Name:	Intel Xeon E5-2687W
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3100
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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

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Software

Operating System:	Windows 7 Professional (64-bit)
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:	Yes
File System:	NTFS
System State:	Default

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L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-9, ECC)
Disk Subsystem: 1 x 250 GB SATAIII 7200 RPM
Other Hardware: None

Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap Library 10.0

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	88.7	153	76.6	177	**88.6**	**153**	88.7	153	76.6	177	**88.6**	**153**
416.gamess	618	31.7	621	31.5	**620**	**31.6**	508	38.6	506	38.7	**506**	**38.7**
433.milc	150	61.1	152	60.6	**151**	**60.8**	150	61.1	152	60.6	**151**	**60.8**
434.zeusmp	**62.0**	**147**	62.0	147	61.9	147	**62.0**	**147**	62.0	147	61.9	147
435.gromacs	230	31.0	229	31.1	**230**	**31.0**	230	31.0	229	31.1	**230**	**31.0**
436.cactusADM	27.1	441	**27.1**	**441**	27.6	433	30.2	396	27.6	433	**28.0**	**427**
437.leslie3d	48.2	195	48.3	195	**48.2**	**195**	48.2	195	48.3	195	**48.2**	**195**
444.namd	**311**	**25.8**	311	25.8	311	25.8	304	26.4	**304**	**26.3**	304	26.3
447.dealII	**206**	**55.5**	206	55.5	206	55.5	**206**	**55.5**	206	55.5	206	55.5
450.soplex	186	45.0	185	45.1	**185**	**45.0**	186	45.0	185	45.1	**185**	**45.0**
453.povray	112	47.7	112	47.7	**112**	**47.7**	**91.6**	**58.1**	91.4	58.2	91.6	58.1
454.calculix	199	41.4	**199**	**41.4**	200	41.3	199	41.4	**199**	**41.4**	200	41.3
459.GemsFDTD	**75.0**	**142**	74.9	142	75.1	141	64.8	164	**64.8**	**164**	64.8	164
465.tonto	288	34.2	288	34.2	**288**	**34.2**	259	38.0	260	37.9	**259**	**38.0**
470.lbm	**28.6**	**480**	28.6	480	28.5	482	30.1	457	**30.2**	**455**	30.2	455
481.wrf	164	68.2	**165**	**67.7**	167	67.0	164	68.2	**165**	**67.7**	167	67.0
482.sphinx3	251	77.6	**252**	**77.4**	252	77.3	251	77.6	**252**	**77.4**	252	77.3

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

Operating System Notes

```
OMP_NUM_THREADS=16 (number of cores)
KMP_AFFINITY=granularity=fine,scatter
```

Platform Notes

```
Sysinfo program C:\cpu2006.v1.2/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Spec-PC Fri Jan 18 23:58:19 2013

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 Professional
OS Version    : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: Dell Inc.
System Model  : Precision T7600
Processor(s)  : 2 Processor(s) Installed.
     [01]: Intel64 Family 6 Model 45 Stepping 6 GenuineIntel ~2294 Mhz
     [02]: Intel64 Family 6 Model 45 Stepping 6 GenuineIntel ~3101 Mhz
BIOS Version  : Dell Inc. A05, 11/8/2012
Total Physical Memory: 65,462 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
L2CacheSize   : 2048
L3CacheSize   : 4096
MaxClockSpeed : 3101
Name          : Intel(R) Xeon(R) CPU E5-2687W 0 @ 3.10GHz
NumberOfCores : 8
NumberOfLogicalProcessors: 16
DeviceID      : CPU1
L2CacheSize   : 2048
L3CacheSize   : 4096
MaxClockSpeed : 3101
Name          : Intel(R) Xeon(R) CPU E5-2687W 0 @ 3.10GHz
NumberOfCores : 8
NumberOfLogicalProcessors: 16

(End of data from sysinfo program)
```

General Notes

```
Binaries were built on Windows 7 Professional (64-bit)

Submitted_by: <Alex_Shows@DELL.com>
Submitted: Mon Feb 11 17:38:59 EST 2013
Submission: cpu2006-20130211-25516.sub
```

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
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- -Qparallel -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F512000000

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

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

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

Peak Compiler Invocation

C benchmarks:
icl -Qvc10 -Qstd=c99

C++ benchmarks:
icl -Qvc10

Continued on next page

Peak Compiler Invocation (Continued)

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: -Qprof_gen(pass 1) -QxAVX(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qansi-alias -Qparallel -Qauto-ilp32 /F512000000

482.sphinx3: basepeak = yes

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.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -Qprof_gen(pass 1) -QxAVX(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32 /F512000000 shlw64m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes

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

434.zeusmp: basepeak = yes

Continued on next page

Peak Optimization Flags (Continued)

437.leslie3d: basepeak = yes

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

465.tonto: -Qprof_gen(pass 1) -QxAVX(pass 2) -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: -Qprof_gen(pass 1) -QxAVX(pass 2) -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/Dell-ic12.1-Windows.html
http://www.spec.org/cpu2006/flags/Dell-platform-Precision.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.xml

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

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