SPEC® CFP2006 Result
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Intel Corporation

Alienware Area-51 M15x-R1 (Intel Core 2 Extreme X9000)

$SPECfp^®\_rate2006 =$ 26.0

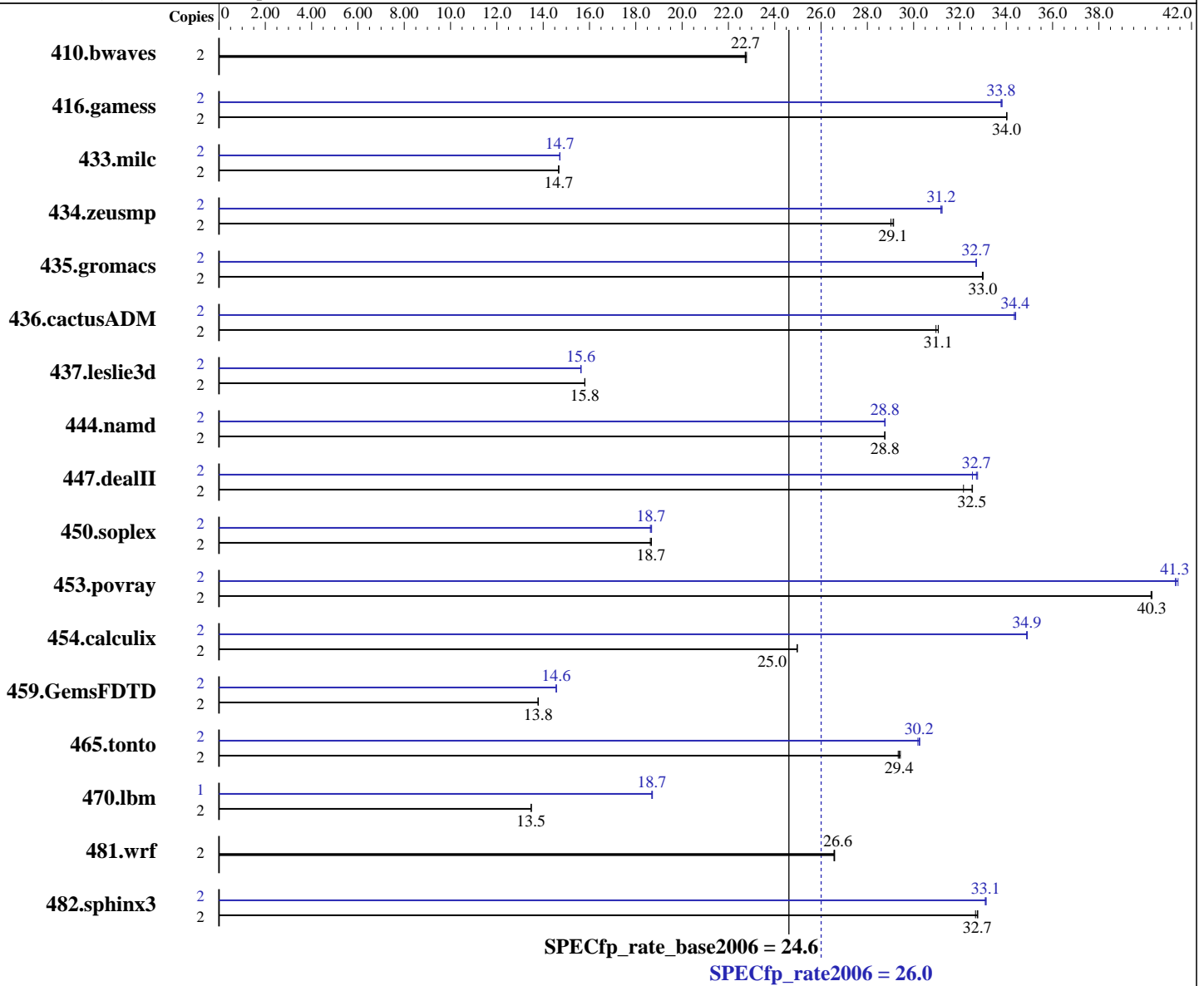$SPECfp\_rate\_base2006 =$ 24.6

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Benchmark	Copies	Result
410.bwaves	2	22.7
416.gamess	2 / 2	33.8 / 34.0
433.milc	2 / 2	14.7 / 14.7
434.zeusmp	2 / 2	31.2 / 29.1
435.gromacs	2 / 2	32.7 / 33.0
436.cactusADM	2 / 2	34.4 / 31.1
437.leslie3d	2 / 2	15.6 / 15.8
444.namd	2 / 2	28.8 / 28.8
447.dealII	2 / 2	32.7 / 32.5
450.soplex	2 / 2	18.7 / 18.7
453.povray	2 / 2	41.3 / 40.3
454.calculix	2 / 2	34.9 / 25.0
459.GemsFDTD	2 / 2	14.6 / 13.8
465.tonto	2 / 2	30.2 / 29.4
470.lbm	1 / 2	18.7 / 13.5
481.wrf	2	26.6
482.sphinx3	2 / 2	33.1 / 32.7

SPECfp_rate_base2006 = 24.6

SPECfp_rate2006 = 26.0

Hardware

CPU Name:	Intel Core 2 Extreme X9000
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:	6 MB I+D on chip per chip

Continued on next page

Software

Operating System:	Windows Vista Ultimate(32-bit)
Compiler:	Intel C++ Compiler for IA32 version 10.1 Build 20070913 Package ID: w_cc_p_10.1.011 Intel Fortran Compiler for IA32 version 10.1 Build 20070913 Package ID: w_fc_p_10.1.011 Microsoft Visual Studio 2005 SP1 (for libraries)
Auto Parallel:	Yes
File System:	NTFS
System State:	Default

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CPU2006 license: 13		**Test date:**	Dec-2007
Test sponsor: Intel Corporation		**Hardware Availability:**	Jan-2008
Tested by: Intel Corporation		**Software Availability:**	Nov-2007

L3 Cache:	None	Base Pointers:	32-bit
Other Cache:	None	Peak Pointers:	32-bit
Memory:	2 GB (2x1GB Qimonda DDR2-667 CL5)	Other Software:	None
Disk Subsystem:	Fujitsu 120GB GB SATA, 7200 RPM		SmartHeap Library Version 8.1 from
Other Hardware:	None		http://www.microquill.com/

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	2	1196	22.7	**1195**	**22.7**	1193	22.8	2	1196	22.7	**1195**	**22.7**	1193	22.8
416.gamess	2	1151	34.0	**1151**	**34.0**	1151	34.0	2	**1159**	**33.8**	1159	33.8	1158	33.8
433.milc	2	1251	14.7	**1251**	**14.7**	1252	14.7	2	1247	14.7	1248	14.7	**1247**	**14.7**
434.zeusmp	2	**625**	**29.1**	627	29.0	625	29.1	2	**584**	**31.2**	584	31.2	583	31.2
435.gromacs	2	**433**	**33.0**	433	33.0	433	33.0	2	**437**	**32.7**	437	32.7	437	32.7
436.cactusADM	2	769	31.1	772	31.0	**769**	**31.1**	2	**695**	**34.4**	696	34.3	695	34.4
437.leslie3d	2	**1190**	**15.8**	1190	15.8	1190	15.8	2	**1203**	**15.6**	1202	15.6	1203	15.6
444.namd	2	558	28.8	**558**	**28.8**	558	28.8	2	558	28.8	**558**	**28.8**	558	28.8
447.dealII	2	712	32.2	703	32.5	**704**	**32.5**	2	698	32.8	**699**	**32.7**	703	32.5
450.soplex	2	895	18.6	893	18.7	**894**	**18.7**	2	895	18.6	**894**	**18.7**	893	18.7
453.povray	2	**264**	**40.3**	264	40.3	264	40.3	2	258	41.3	**257**	**41.3**	257	41.4
454.calculix	2	661	25.0	**661**	**25.0**	661	25.0	2	**473**	**34.9**	473	34.9	473	34.9
459.GemsFDTD	2	**1540**	**13.8**	1538	13.8	1540	13.8	2	1457	14.6	1457	14.6	**1457**	**14.6**
465.tonto	2	669	29.4	**670**	**29.4**	671	29.3	2	**651**	**30.2**	650	30.3	652	30.2
470.lbm	2	**2038**	**13.5**	2038	13.5	2038	13.5	1	735	18.7	**735**	**18.7**	734	18.7
481.wrf	2	**841**	**26.6**	841	26.6	840	26.6	2	**841**	**26.6**	841	26.6	840	26.6
482.sphinx3	2	1189	32.8	**1190**	**32.7**	1193	32.7	2	**1178**	**33.1**	1178	33.1	1176	33.1

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

General Notes

```
The system bus runs at 800 MHz
Binaries were built on Windows Vista32
The following VS 2005 SP1 updates were applied: KB926601 and KB932232
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
The start command with the /affinity switch was used to bind processes to cores
```

Base Compiler Invocation

C benchmarks:
```
icl -Qvc8 -Qc99
```

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CPU2006 license: 13

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Test date: Dec-2007

Hardware Availability: Jan-2008

Software Availability: Nov-2007

Base Compiler Invocation (Continued)

C++ benchmarks:
```
icl -Qvc8
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc8 -Qc99 ifort
```

Base Portability Flags

```
436.cactusADM: -Qlowercase /assume:underscore
      444.namd: -TP
    447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
    453.povray: -DSPEC_CPU_WINDOWS_ICL
   454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
       481.wrf: -DSPEC_CPU_WINDOWS_ICL
```

Base Optimization Flags

C benchmarks:
```
-fast /F1000000000
```

C++ benchmarks:
```
-fast -Qcxx_features /F1000000000 shlw32m.lib
          -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-fast /F1000000000
```

Benchmarks using both Fortran and C:
```
-fast /F1000000000
```

Peak Compiler Invocation

C benchmarks:
```
icl -Qvc8 -Qc99
```

C++ benchmarks:
```
icl -Qvc8
```

Fortran benchmarks:
```
ifort
```

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Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
```
icl -Qvc8 -Qc99 ifort
```

Peak Portability Flags

```
    436.cactusADM: -Qlowercase /assume:underscore
        444.namd: -TP
        447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
       453.povray: -DSPEC_CPU_WINDOWS_ICL
      454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
          481.wrf: -DSPEC_CPU_WINDOWS_ICL
```

Peak Optimization Flags

C benchmarks:

```
        433.milc: -fast -Qunroll2 -Oa /F1000000000

        470.lbm: -fast -Qunroll2 -Qscalar-rep- -Qprefetch /F1000000000

      482.sphinx3: -fast -Qunroll2 /F1000000000
```

C++ benchmarks:

```
        444.namd: -fast -Oa -Qcxx_features /F1000000000 shlw32m.lib
                  -link /FORCE:MULTIPLE

        447.dealII: -fast -Qunroll2 -Qprefetch -Qcxx_features /F1000000000
              shlw32m.lib           -link /FORCE:MULTIPLE

        450.soplex: -fast -Qcxx_features /F1000000000 shlw32m.lib
                  -link /FORCE:MULTIPLE

       453.povray: -fast -Qunroll4 -Qansi-alias -Qcxx_features /F1000000000
              shlw32m.lib           -link /FORCE:MULTIPLE
```

Fortran benchmarks:

```
        410.bwaves: basepeak = yes

        416.gamess: -fast -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep-
                  /F1000000000

        434.zeusmp: -QxT -O2 -Qprec-div- -Qunroll0 -Qscalar-rep- /F1000000000
```

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Peak Optimization Flags (Continued)

437.leslie3d: `-fast -Qprefetch /F1000000000`

459.GemsFDTD: `-fast -Qunroll2 -Ob0 -Qprefetch /F1000000000`

465.tonto: `-fast -Qunroll4 -Qauto /F1000000000`

Benchmarks using both Fortran and C:

435.gromacs: `-fast -Oa -Qprefetch /F1000000000`

436.cactusADM: `-fast -Qunroll2 -Qprefetch /F1000000000`

454.calculix: `-fast -Qunroll-aggressive /F1000000000`

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-ic10-ia32-intel64-linux-flags.20090714.09.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.09.xml`

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

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