SPEC® CFP2006 Result
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Dell Inc.

PowerEdge T710 (Intel Xeon X5680, 3.33 GHz)

$SPECfp^®_rate2006 = $ 255

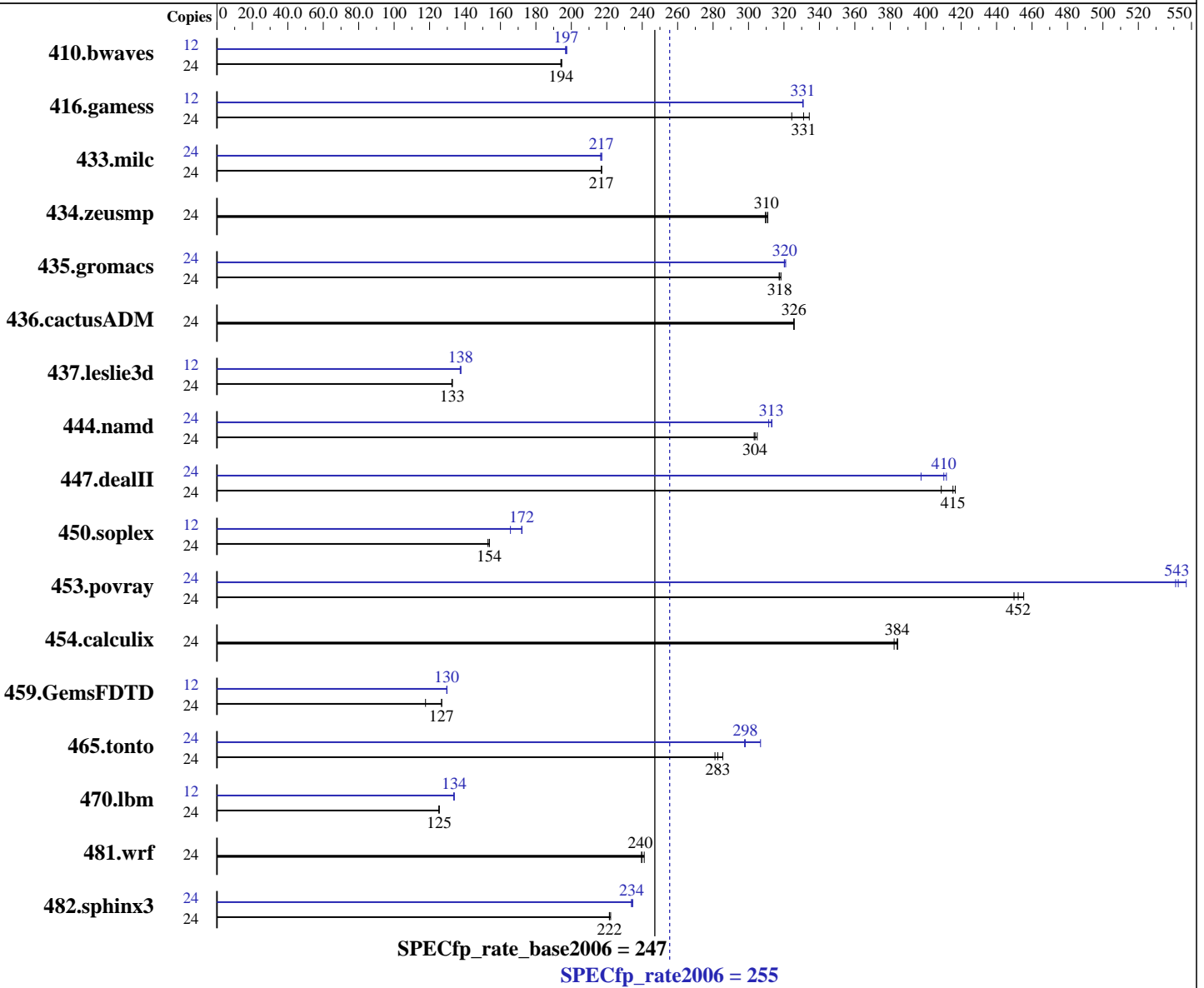$SPECfp_rate_base2006 = $ 247

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

Test date: Feb-2010
Hardware Availability: Mar-2010
Software Availability: Dec-2009

Copies

Benchmark	Copies	Result
410.bwaves	12	197
	24	194
416.gamess	12	331
	24	331
433.milc	24	217
	24	217
434.zeusmp	24	310
435.gromacs	24	320
	24	318
436.cactusADM	24	326
437.leslie3d	12	138
	24	133
444.namd	24	313
	24	304
447.dealII	24	410
	24	415
450.soplex	12	172
	24	154
453.povray	24	543
	24	452
454.calculix	24	384
459.GemsFDTD	12	130
	24	127
465.tonto	24	298
	24	283
470.lbm	12	134
	24	125
481.wrf	24	240
482.sphinx3	24	234
	24	222

SPECfp_rate_base2006 = 247

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Hardware

CPU Name: Intel Xeon X5680
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 3333
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp
Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1
Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel: No
File System: ext3
System State: Run level 3 (multi-user)

Continued on next page

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L3 Cache:	12 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	24 GB (6 x 4 GB DDR3-1333 DR RDIMM)	Other Software:	Binutils 2.18.50.0.7.20080502
Disk Subsystem:	2 x 300 GB 10000 RPM SAS		
Other Hardware:	None		

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	**1679**	**194**	1676	195	1680	194	12	829	197	826	197	**827**	**197**
416.gamess	24	1406	334	1449	324	**1419**	**331**	12	711	331	710	331	**711**	**331**
433.milc	24	1015	217	1015	217	**1015**	**217**	24	**1015**	**217**	1017	217	1015	217
434.zeusmp	24	702	311	**704**	**310**	706	309	24	702	311	**704**	**310**	706	309
435.gromacs	24	**540**	**318**	538	318	540	317	24	**535**	**320**	534	321	535	320
436.cactusADM	24	**881**	**326**	881	326	880	326	24	**881**	**326**	881	326	880	326
437.leslie3d	24	1702	133	1698	133	**1699**	**133**	12	819	138	822	137	**820**	**138**
444.namd	24	**634**	**304**	635	303	631	305	24	618	311	615	313	**615**	**313**
447.dealII	24	659	417	672	409	**661**	**415**	24	667	412	691	397	**669**	**410**
450.soplex	24	1309	153	1302	154	**1302**	**154**	12	604	166	581	172	**582**	**172**
453.povray	24	284	450	**282**	**452**	280	455	24	**235**	**543**	233	547	236	541
454.calculix	24	515	384	518	382	**516**	**384**	24	515	384	518	382	**516**	**384**
459.GemsFDTD	24	2163	118	2008	127	**2009**	**127**	12	981	130	981	130	**981**	**130**
465.tonto	24	827	286	**835**	**283**	840	281	24	**792**	**298**	770	307	793	298
470.lbm	24	**2629**	**125**	2629	125	2632	125	12	1231	134	**1231**	**134**	1234	134
481.wrf	24	1112	241	**1118**	**240**	1119	240	24	1112	241	**1118**	**240**	1119	240
482.sphinx3	24	2112	221	2105	222	**2111**	**222**	24	1993	235	**1998**	**234**	2000	234

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.
     numactl was used to bind copies to the cores

Operating System Notes

    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

    BIOS Settings:
    Power Management = Maximum Performance (Default = Active Power Controller)
    Data Reuse = Disabled (Default = Enabled)

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General Notes

The Dell PowerEdge T710 and
the Bull NovaScale T860 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge T710 model

Base Compiler Invocation

C benchmarks:
    icc   -m64

C++ benchmarks:
    icpc   -m64

Fortran benchmarks:
    ifort -m64

Benchmarks using both Fortran and C:
    icc   -m64 ifort -m64

Base Portability Flags

      410.bwaves: -DSPEC_CPU_LP64
      416.gamess: -DSPEC_CPU_LP64
        433.milc: -DSPEC_CPU_LP64
      434.zeusmp: -DSPEC_CPU_LP64
     435.gromacs: -DSPEC_CPU_LP64 -nofor_main
    436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
      437.leslie3d: -DSPEC_CPU_LP64
        444.namd: -DSPEC_CPU_LP64
       447.dealII: -DSPEC_CPU_LP64
      450.soplex: -DSPEC_CPU_LP64
      453.povray: -DSPEC_CPU_LP64
     454.calculix: -DSPEC_CPU_LP64 -nofor_main
    459.GemsFDTD: -DSPEC_CPU_LP64
       465.tonto: -DSPEC_CPU_LP64
        470.lbm: -DSPEC_CPU_LP64
        481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
      482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc    -m64
```

```
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):
```
icpc   -m64
```

```
450.soplex: icpc -m32
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

Peak Portability Flags

```
       410.bwaves: -DSPEC_CPU_LP64
       416.gamess: -DSPEC_CPU_LP64
         433.milc: -DSPEC_CPU_LP64
       434.zeusmp: -DSPEC_CPU_LP64
      435.gromacs: -DSPEC_CPU_LP64 -nofor_main
     436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
      437.leslie3d: -DSPEC_CPU_LP64
         444.namd: -DSPEC_CPU_LP64
        447.dealII: -DSPEC_CPU_LP64
       453.povray: -DSPEC_CPU_LP64
      454.calculix: -DSPEC_CPU_LP64 -nofor_main
     459.GemsFDTD: -DSPEC_CPU_LP64
        465.tonto: -DSPEC_CPU_LP64
         470.lbm: -DSPEC_CPU_LP64
          481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

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Peak Optimization Flags

C benchmarks:

> 433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -fno-alias -opt-prefetch

> 470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -opt-malloc-options=3 -ansi-alias -auto-ilp32

> 482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

> 444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -fno-alias -auto-ilp32

> 447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -unroll2 -ansi-alias -scalar-rep-

> 450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -opt-malloc-options=3

> 453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -unroll4 -ansi-alias

Fortran benchmarks:

> 410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

> 416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -unroll2 -Ob0 -ansi-alias -scalar-rep-

> 434.zeusmp: basepeak = yes

> 437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

> 459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -unroll2 -Ob0

> 465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
> -unroll4 -auto -inline-calloc -opt-malloc-options=3

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

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-ic11.1-linux64-revE.20100330.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml

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

Tested with SPEC CPU2006 v1.1.
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