SPEC® CFP2006 Result

Itautec

Servidor Itautec MX223 (Intel Xeon E5620)

$SPECfp®\_rate2006 =$ 92.2

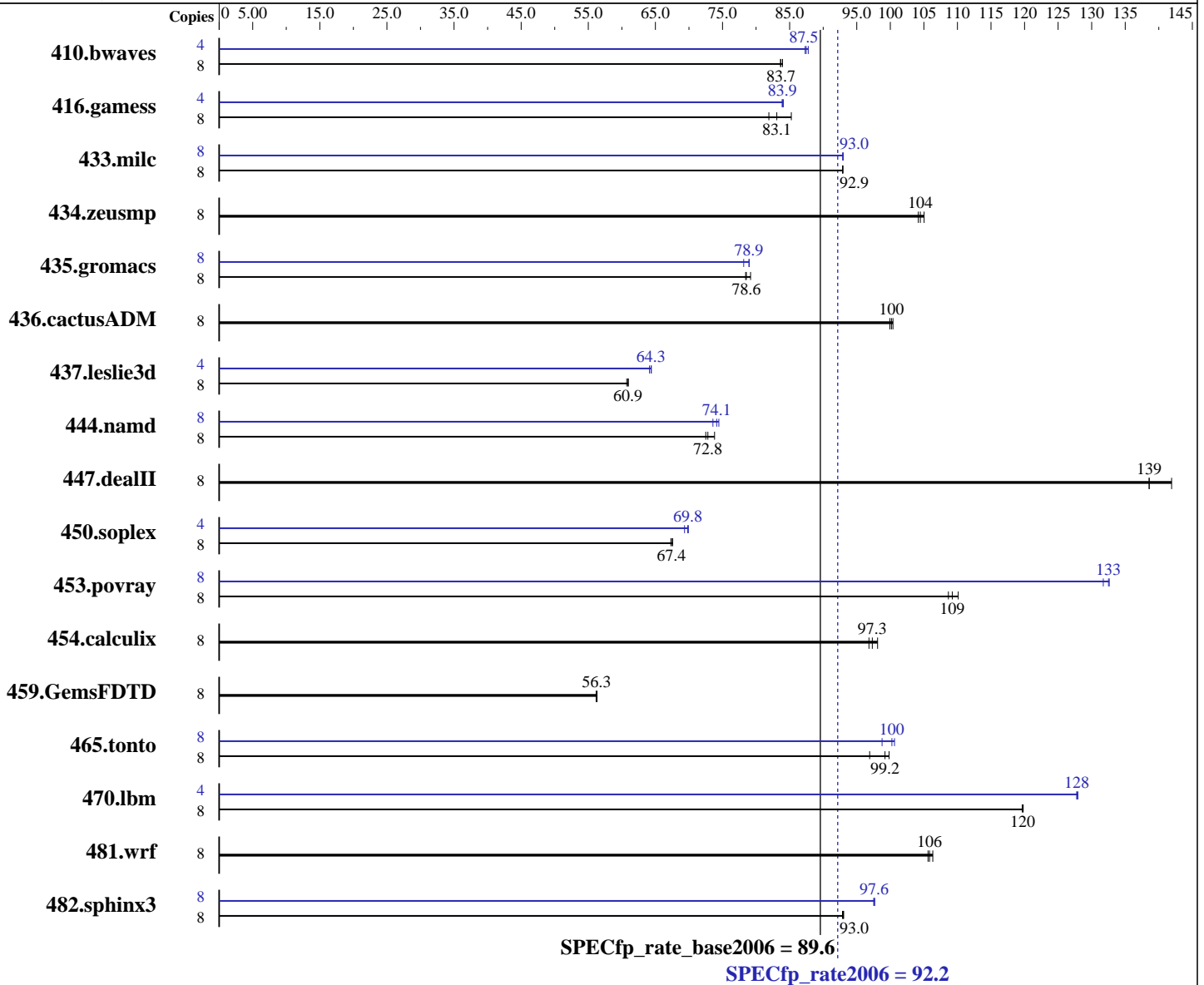$SPECfp\_rate\_base2006 =$ 89.6

CPU2006 license: 9001
Test sponsor: Itautec
Tested by: Itautec

Test date: Jul-2011
Hardware Availability: Apr-2010
Software Availability: Jan-2011

Copies	Benchmark results
410.bwaves	4: 87.5 / 8: 83.7
416.gamess	4: 83.9 / 8: 83.1
433.milc	8: 93.0 / 8: 92.9
434.zeusmp	8: 104
435.gromacs	8: 78.9 / 8: 78.6
436.cactusADM	8: 100
437.leslie3d	4: 64.3 / 8: 60.9
444.namd	8: 74.1 / 8: 72.8
447.dealII	8: 139
450.soplex	4: 69.8 / 8: 67.4
453.povray	8: 133 / 8: 109
454.calculix	8: 97.3
459.GemsFDTD	8: 56.3
465.tonto	8: 100 / 8: 99.2
470.lbm	4: 128 / 8: 120
481.wrf	8: 106
482.sphinx3	8: 97.6 / 8: 93.0

SPECfp_rate_base2006 = 89.6

SPECfp_rate2006 = 92.2

Hardware

CPU Name: Intel Xeon E5620
CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 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 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.2 Build 20110112
Auto Parallel: No
File System: ext3
System State: Run level 3 (multi-user)
Base Pointers: 64-bit

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB 2Rx4 PC3-8500R-7, ECC)
Disk Subsystem: 1 x 500 GB SATA-2, 7200 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1295	83.9	**1299**	**83.7**	1300	83.6	4	619	87.8	**622**	**87.5**	623	87.3
416.gamess	8	1837	85.2	**1885**	**83.1**	1912	81.9	4	932	84.1	**933**	**83.9**	934	83.9
433.milc	8	790	92.9	**790**	**92.9**	791	92.9	8	791	92.9	790	93.0	**790**	**93.0**
434.zeusmp	8	693	105	**697**	**104**	699	104	8	693	105	**697**	**104**	699	104
435.gromacs	8	721	79.2	728	78.4	**727**	**78.6**	8	723	79.0	**724**	**78.9**	731	78.2
436.cactusADM	8	957	99.9	**954**	**100**	952	100	8	957	99.9	**954**	**100**	952	100
437.leslie3d	8	1233	61.0	1238	60.7	**1235**	**60.9**	4	586	64.1	**584**	**64.3**	584	64.4
444.namd	8	869	73.8	885	72.5	**881**	**72.8**	8	**866**	**74.1**	862	74.5	872	73.6
447.dealII	8	645	142	**660**	**139**	660	139	8	645	142	**660**	**139**	660	139
450.soplex	8	991	67.3	**990**	**67.4**	987	67.6	4	481	69.3	**478**	**69.8**	477	69.9
453.povray	8	386	110	**390**	**109**	392	109	8	**321**	**133**	323	132	321	133
454.calculix	8	673	98.1	682	96.8	**678**	**97.3**	8	673	98.1	682	96.8	**678**	**97.3**
459.GemsFDTD	8	**1509**	**56.3**	1511	56.2	1508	56.3	8	**1509**	**56.3**	1511	56.2	1508	56.3
465.tonto	8	789	99.8	812	96.9	**793**	**99.2**	8	782	101	797	98.8	**785**	**100**
470.lbm	8	**918**	**120**	918	120	919	120	4	430	128	**430**	**128**	430	128
481.wrf	8	**844**	**106**	846	106	840	106	8	**844**	**106**	846	106	840	106
482.sphinx3	8	**1677**	**93.0**	1676	93.0	1679	92.9	8	1599	97.5	1596	97.7	**1597**	**97.6**

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.
 Large pages were not enabled for this run
```

Platform Notes

```
Data Reuse disabled in BIOS.
```

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General Notes

This result was measured on the Servidor Itautec MX203.
The Servidor Itautec MX203 and the Servidor Itautec MX223
are electronically equivalent.

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 -ansi-alias

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

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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 -ansi-alias
```

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) -prof-use(pass 2) -static -auto-ilp32

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

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

C++ benchmarks:

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

> 447.dealII: basepeak = yes

> 450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
> -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

> 453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
> -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

> 410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -static

> 416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
> -inline-level=0 -scalar-rep- -static

> 434.zeusmp: basepeak = yes

> 437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div
> -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

> 459.GemsFDTD: basepeak = yes

> 465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
> -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
> -inline-calloc -opt-malloc-options=3
> -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

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

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/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Itautec-Intel-Linux64-Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Itautec-Intel-Linux64-Platform.xml

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