SPEC® CFP2006 Result
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Itautec

Servidor Itautec MX224 (Intel Xeon E5640)

SPECfp®_rate2006 = 97.4
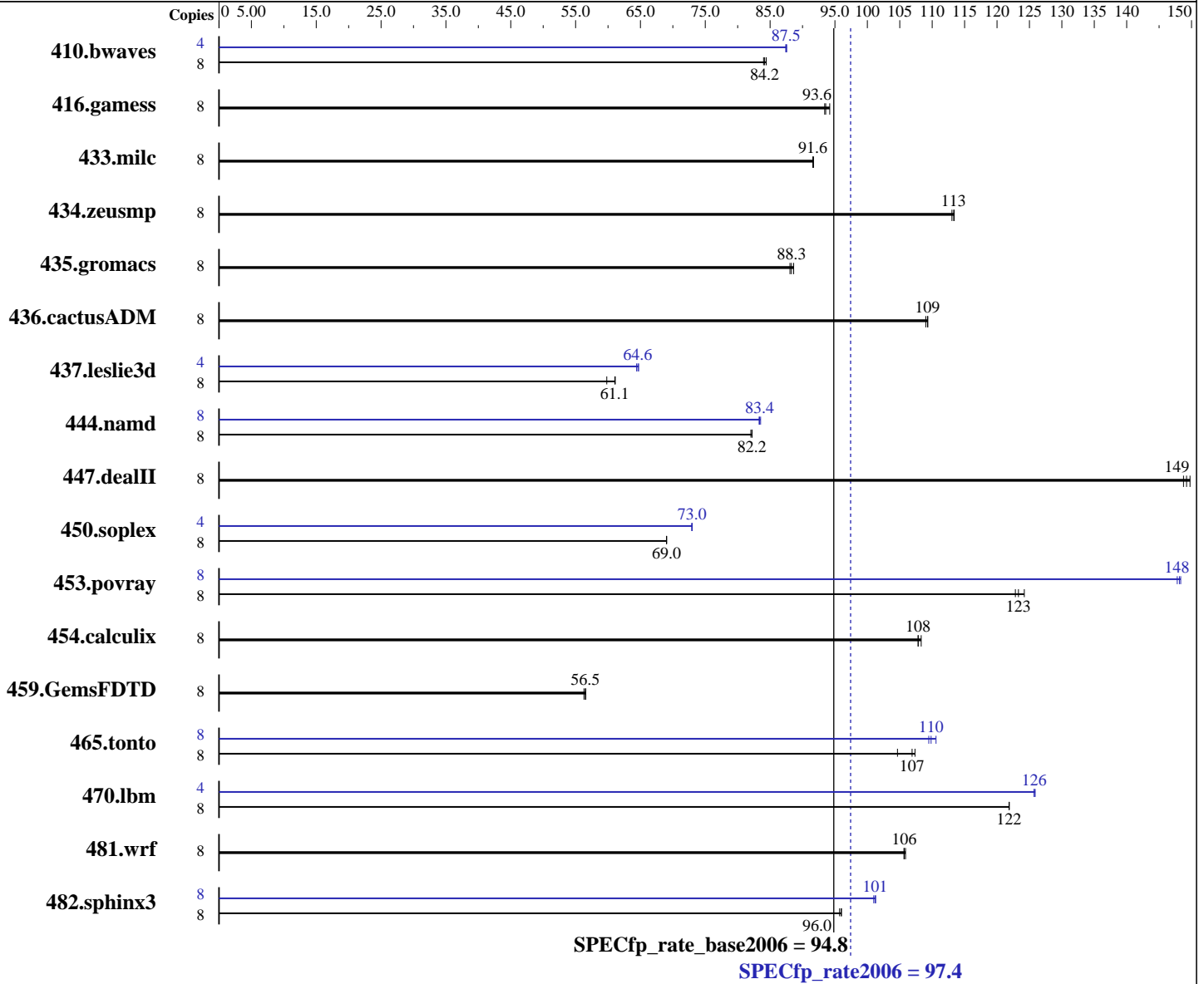
SPECfp_rate_base2006 = 94.8

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

Test date: Jul-2011
Hardware Availability: Feb-2011
Software Availability: Jan-2011

Benchmark	Copies	Result
410.bwaves	4	87.5
	8	84.2
416.gamess	8	93.6
433.milc	8	91.6
434.zeusmp	8	113
435.gromacs	8	88.3
436.cactusADM	8	109
437.leslie3d	4	64.6
	8	61.1
444.namd	8	83.4
	8	82.2
447.dealII	8	149
450.soplex	4	73.0
	8	69.0
453.povray	8	148
	8	123
454.calculix	8	108
459.GemsFDTD	8	56.5
465.tonto	8	110
	8	107
470.lbm	4	126
	8	122
481.wrf	8	106
482.sphinx3	8	101
	8	96.0

SPECfp_rate_base2006 = 94.8

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Hardware

CPU Name: Intel Xeon E5640
CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz: 2667
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	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	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		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1288	84.4	**1292**	**84.2**	1294	84.0	4	621	87.6	**621**	**87.5**	622	87.4
416.gamess	8	1663	94.2	1677	93.4	**1674**	**93.6**	8	1663	94.2	1677	93.4	**1674**	**93.6**
433.milc	8	801	91.7	**802**	**91.6**	802	91.6	8	801	91.7	**802**	**91.6**	802	91.6
434.zeusmp	8	**642**	**113**	644	113	642	113	8	**642**	**113**	644	113	642	113
435.gromacs	8	644	88.6	649	88.1	**647**	**88.3**	8	644	88.6	649	88.1	**647**	**88.3**
436.cactusADM	8	877	109	874	109	**875**	**109**	8	877	109	874	109	**875**	**109**
437.leslie3d	8	1230	61.1	1257	59.8	**1232**	**61.1**	4	**582**	**64.6**	584	64.4	581	64.7
444.namd	8	780	82.2	**781**	**82.2**	782	82.0	8	770	83.3	**770**	**83.4**	768	83.5
447.dealII	8	611	150	615	149	**613**	**149**	8	611	150	615	149	**613**	**149**
450.soplex	8	**966**	**69.0**	967	69.0	966	69.0	4	458	72.9	457	73.0	**457**	**73.0**
453.povray	8	346	123	**345**	**123**	343	124	8	287	148	288	148	**287**	**148**
454.calculix	8	609	108	**612**	**108**	612	108	8	609	108	**612**	**108**	612	108
459.GemsFDTD	8	**1502**	**56.5**	1500	56.6	1508	56.3	8	**1502**	**56.5**	1500	56.6	1508	56.3
465.tonto	8	733	107	752	105	**736**	**107**	8	719	109	**717**	**110**	712	111
470.lbm	8	902	122	**902**	**122**	902	122	4	437	126	**437**	**126**	437	126
481.wrf	8	844	106	**845**	**106**	846	106	8	844	106	**845**	**106**	846	106
482.sphinx3	8	1624	96.0	**1625**	**96.0**	1629	95.7	8	1539	101	1544	101	**1541**	**101**

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 MX224.
The Servidor Itautec MX203+, Servidor Itautec MX223+ and the Servidor Itautec MX224
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: basepeak = yes

    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: basepeak = yes

    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:

    435.gromacs: basepeak = yes

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Peak Optimization Flags (Continued)

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

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

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