



SPEC[®] CFP2006 Result

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Itautec

SPECfp[®]_rate2006 = 385

Servidor Itautec MX215 (Intel Xeon E5-2640)

SPECfp_rate_base2006 = 373

CPU2006 license: 9001

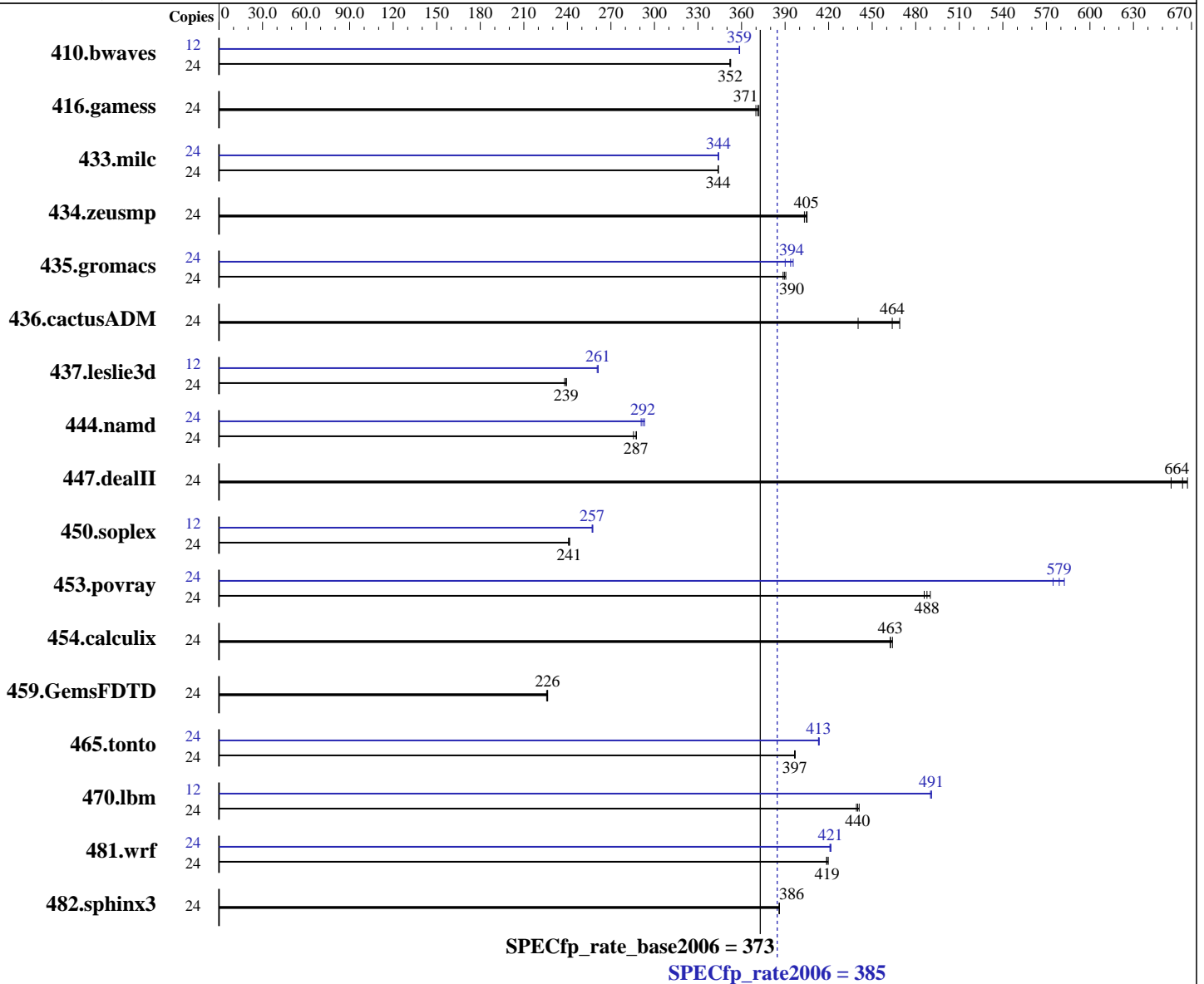
Test date: Apr-2013

Test sponsor: Itautec

Hardware Availability: Jun-2012

Tested by: Itautec

Software Availability: Jan-2013



Hardware

CPU Name: Intel Xeon E5-2640
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2500
 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: Red Hat Enterprise Linux Server release 6.3, 2.6.32-279.el6.x86_64
 Compiler: C/C++/Fortran: Version 13.1.0.146 of Intel Compiler XE Build 20130121
 Auto Parallel: No
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx8 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem: 500 GB, SATA-3, 7200 RPM
Other Hardware: None

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	926	352	925	353	927	352	12	455	359	455	359	455	358
416.gamess	24	1270	370	1263	372	1266	371	24	1270	370	1263	372	1266	371
433.milc	24	641	344	640	344	641	344	24	641	344	640	344	640	344
434.zeusmp	24	542	403	539	405	540	405	24	542	403	539	405	540	405
435.gromacs	24	441	389	439	391	440	390	24	435	394	433	396	439	390
436.cactusADM	24	651	440	618	464	612	469	24	651	440	618	464	612	469
437.leslie3d	24	942	239	944	239	948	238	12	433	261	432	261	432	261
444.namd	24	669	288	674	286	670	287	24	659	292	662	291	656	293
447.dealII	24	412	667	419	656	414	664	24	412	667	419	656	414	664
450.soplex	24	829	242	830	241	831	241	12	389	258	389	257	389	257
453.povray	24	262	488	261	490	263	486	24	219	582	222	575	221	579
454.calculix	24	427	464	428	462	428	463	24	427	464	428	462	428	463
459.GemsFDTD	24	1128	226	1125	226	1125	226	24	1128	226	1125	226	1125	226
465.tonto	24	596	397	595	397	595	397	24	572	413	571	414	572	413
470.lbm	24	751	439	748	441	749	440	12	336	491	336	490	336	491
481.wrf	24	641	419	639	420	640	419	24	637	421	636	422	636	421
482.sphinx3	24	1212	386	1212	386	1212	386	24	1212	386	1212	386	1212	386

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



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Platform Notes

Sysinfo program /home/rcaneca/cpu2006/Docs/sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 # \$ 8787f7622badcf24e01c368b1db4377c
running on mx225 Mon Apr 8 16:57:41 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>

```
From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2640 0 @ 2.50GHz
 2 "physical id"s (chips)
 24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores : 6
  siblings  : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:      132104788 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.3 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux mx225 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36 EDT 2012 x86_64
x86_64 x86_64 GNU/Linux
```

```
run-level 3 Apr 8 16:56
```

```
SPEC is set to: /home/rcaneca/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_mx225-lv_home
                ext4      404G  3.6G  380G   1% /home
```

(End of data from sysinfo program)



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General Notes

This result was measured on the Servidor Itautec MX225.
The Servidor Itautec MX215 and the Servidor Itautec MX225
are electronically equivalent.

```
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>
```

```
Filesystem page cache cleared with:  
echo 1 > /proc/sys/vm/drop_caches  
Environment variables set by runspec before the start of the run:  
KMP_AFFINITY = "granularity=fine,scatter"  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop_caches
```

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
```



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Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

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

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Peak Portability Flags (Continued)

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

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-opt-mem-layout-trans=3

470.lbm: -xAVX(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 -auto-ilp32
-opt-mem-layout-trans=3

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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

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

Fortran benchmarks:

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

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: basepeak = yes

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Peak Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(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 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Itautec-Servidor_Itautec-Intel-Linux-Platform.20130507.html
<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.html>

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Itautec-Servidor_Itautec-Intel-Linux-Platform.20130507.xml
<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml>

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