SPEC® CFP2006 Result
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Itautec
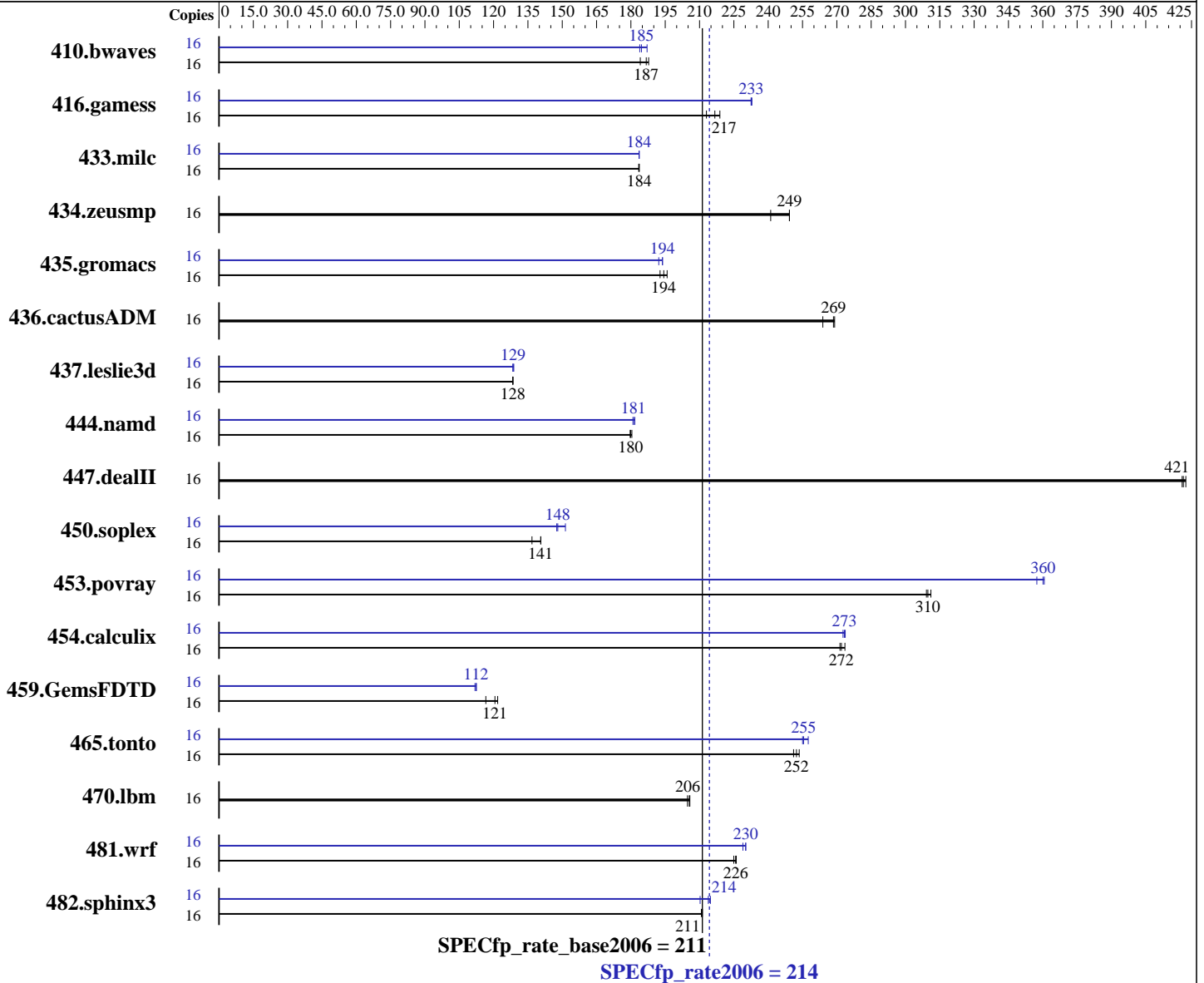
Servidor Itautec MX205 (Intel Xeon E5-2660)

$SPECfp^{®}\_rate2006 = \quad 214$

$SPECfp\_rate\_base2006 = \quad 211$

CPU2006 license: 9001

Test sponsor: Itautec

Tested by: Itautec

Test date: Dec-2011

Hardware Availability: Jun-2012

Software Availability: Dec-2011

SPECfp_rate_base2006 = 211

SPECfp_rate2006 = 214

Hardware

CPU Name: Intel Xeon E5-2660

CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz

CPU MHz: 2200

FPU: Integrated

CPU(s) enabled: 8 cores, 1 chip, 8 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 12.1.0 of Intel Compiler XE Build 20111011

Auto Parallel: No

File System: ext4

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: 32/64-bit

Continued on next page

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L3 Cache:	20 MB I+D on chip per chip	Other Software:	None
Other Cache:	None		
Memory:	32 GB (8 x 4 GB 1Rx4 PC3-12800R-11, ECC)		
Disk Subsystem:	500 GB, SATA-2, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1158	188	1181	184	**1165**	**187**	16	1162	187	**1178**	**185**	1182	184
416.gamess	16	1471	213	**1446**	**217**	1431	219	16	**1347**	**233**	1347	233	1345	233
433.milc	16	**800**	**184**	800	184	801	183	16	800	184	800	184	**800**	**184**
434.zeusmp	16	584	249	604	241	**584**	**249**	16	584	249	604	241	**584**	**249**
435.gromacs	16	**588**	**194**	583	196	593	193	16	589	194	**589**	**194**	594	192
436.cactusADM	16	725	264	711	269	**712**	**269**	16	725	264	711	269	**712**	**269**
437.leslie3d	16	**1172**	**128**	1172	128	1170	129	16	1167	129	1172	128	**1170**	**129**
444.namd	16	**713**	**180**	711	180	714	180	16	706	182	**708**	**181**	709	181
447.dealII	16	**434**	**421**	435	421	433	423	16	**434**	**421**	435	421	433	423
450.soplex	16	**949**	**141**	976	137	949	141	16	**901**	**148**	904	148	881	151
453.povray	16	275	309	**275**	**310**	274	311	16	236	361	238	357	**236**	**360**
454.calculix	16	486	271	**485**	**272**	483	274	16	482	274	484	273	**483**	**273**
459.GemsFDTD	16	1456	117	1394	122	**1408**	**121**	16	1509	112	1518	112	**1511**	**112**
465.tonto	16	**624**	**252**	627	251	621	254	16	**616**	**255**	617	255	611	258
470.lbm	16	1068	206	1074	205	**1070**	**206**	16	1068	206	1074	205	**1070**	**206**
481.wrf	16	**792**	**226**	794	225	791	226	16	**777**	**230**	781	229	776	230
482.sphinx3	16	**1479**	**211**	1479	211	1476	211	16	1452	215	1483	210	**1458**	**214**

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

```
    Sysinfo program /home/rcaneca/cpu2006/Docs/sysinfo
    $Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
    running on itautec2fam5 Thu Dec 22 06:28:38 2011
```

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Platform Notes (Continued)

```
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 : Genuine Intel(R) CPU @ 2.20GHz
      1 "physical id"s (chips)
      16 "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 : 8
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
   cache size : 20480 KB

From /proc/meminfo
   MemTotal:       32824768 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 itautec2fam5 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 Dec 21 17:06

SPEC is set to: /home/rcaneca/cpu2006
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/mapper/vg_itautec2fam5-lv_home
                  ext4     94G  2.1G   87G   3% /home

(End of data from sysinfo program)
```

General Notes

```
This result was measured on the Servidor Itautec MX205.
The Servidor Itautec LX205, Servidor Itautec MX205 and the Servidor Itautec MX225+
are electronically equivalent.
```

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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 -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3

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

Continued on next page

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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`
465.tonto: `-DSPEC_CPU_LP64`
470.lbm: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

Itautec

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Peak Optimization Flags (Continued)

```
  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
            -opt-mem-layout-trans=3

   470.lbm: basepeak = yes

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

 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 -static -opt-prefetch
            -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: -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,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

  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: -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 -opt-mem-layout-trans=3
```

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

481.wrf: -xSSE4.2 -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.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.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.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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

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