SPEC® CFP2006 Result
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Bull SAS

NovaScale T840 F2 (Intel Xeon L5640, 2.26 GHz)

$SPECfp®\_rate2006 =$ 198

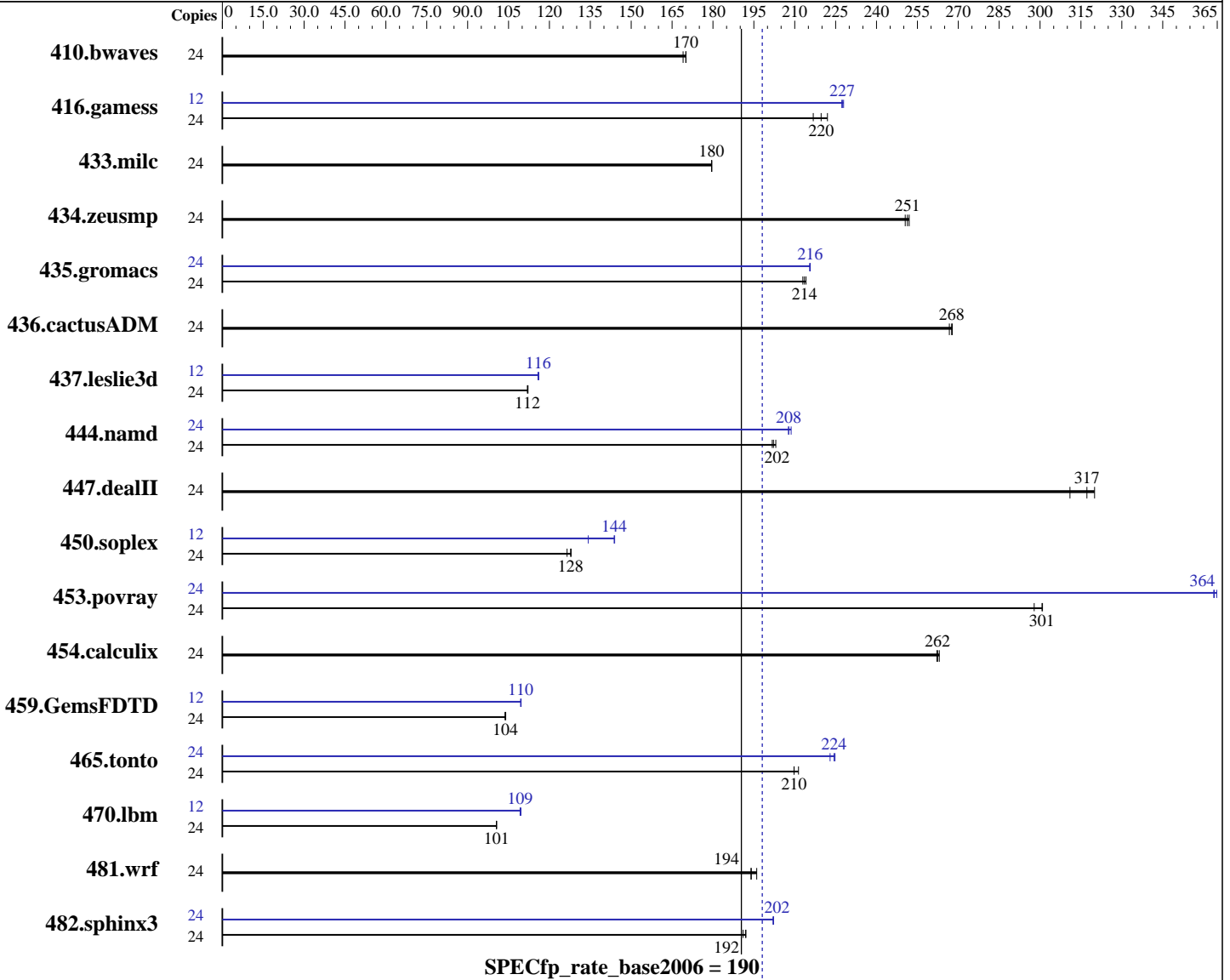$SPECfp\_rate\_base2006 =$ 190

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

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

SPECfp_rate_base2006 = 190

SPECfp_rate2006 = 198

Hardware

CPU Name: Intel Xeon L5640
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2267
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)
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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 x 4 GB DDR3-1333 DR RDIMM)
Disk Subsystem:	1 x 146 GB 15000 RPM SAS
Other Hardware:	None

Base Pointers:	64-bit
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	1929	169	**1918**	**170**	1918	170	24	1929	169	**1918**	**170**	1918	170
416.gamess	24	**2139**	**220**	2168	217	2117	222	12	1034	227	1031	228	**1033**	**227**
433.milc	24	1227	180	1228	179	**1227**	**180**	24	1227	180	1228	179	**1227**	**180**
434.zeusmp	24	872	251	867	252	**869**	**251**	24	872	251	867	252	**869**	**251**
435.gromacs	24	**802**	**214**	800	214	805	213	24	794	216	795	215	**795**	**216**
436.cactusADM	24	**1072**	**268**	1075	267	1071	268	24	**1072**	**268**	1075	267	1071	268
437.leslie3d	24	2012	112	2015	112	**2014**	**112**	12	974	116	**973**	**116**	972	116
444.namd	24	948	203	954	202	**952**	**202**	24	927	208	**926**	**208**	922	209
447.dealII	24	858	320	883	311	**866**	**317**	24	858	320	883	311	**866**	**317**
450.soplex	24	1583	126	**1567**	**128**	1564	128	12	745	134	**696**	**144**	695	144
453.povray	24	429	298	**425**	**301**	424	301	24	**351**	**364**	351	364	350	365
454.calculix	24	753	263	755	262	**755**	**262**	24	753	263	755	262	**755**	**262**
459.GemsFDTD	24	2449	104	2455	104	**2452**	**104**	12	1162	110	**1163**	**110**	1163	109
465.tonto	24	1126	210	1117	211	**1126**	**210**	24	**1052**	**224**	1051	225	1059	223
470.lbm	24	**3278**	**101**	3277	101	3280	101	12	1505	110	1509	109	**1509**	**109**
481.wrf	24	1367	196	**1381**	**194**	1382	194	24	1367	196	**1381**	**194**	1382	194
482.sphinx3	24	2448	191	2435	192	**2437**	**192**	24	2316	202	**2313**	**202**	2313	202

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 T610 and
the Bull NovaScale T840 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge T610 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

Bull SAS

NovaScale T840 F2 (Intel Xeon L5640, 2.26 GHz)

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CPU2006 license: 20		**Test date:**	Apr-2010
Test sponsor: Bull SAS		**Hardware Availability:**	Mar-2010
Tested by: Dell Inc.		**Software Availability:**	Dec-2009

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: basepeak = yes

    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: basepeak = yes

    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: basepeak = yes

    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

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

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Peak Optimization Flags (Continued)

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.
Report generated on Wed Jul 23 09:22:46 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 May 2010.