SPEC® CFP2006 Result

Fujitsu

PRIMERGY TX120 S3p, Intel Xeon E3-1240 v2, 3.40 GHz

$SPECfp^®\_rate2006 =$ 139

$SPECfp\_rate\_base2006 =$ 134

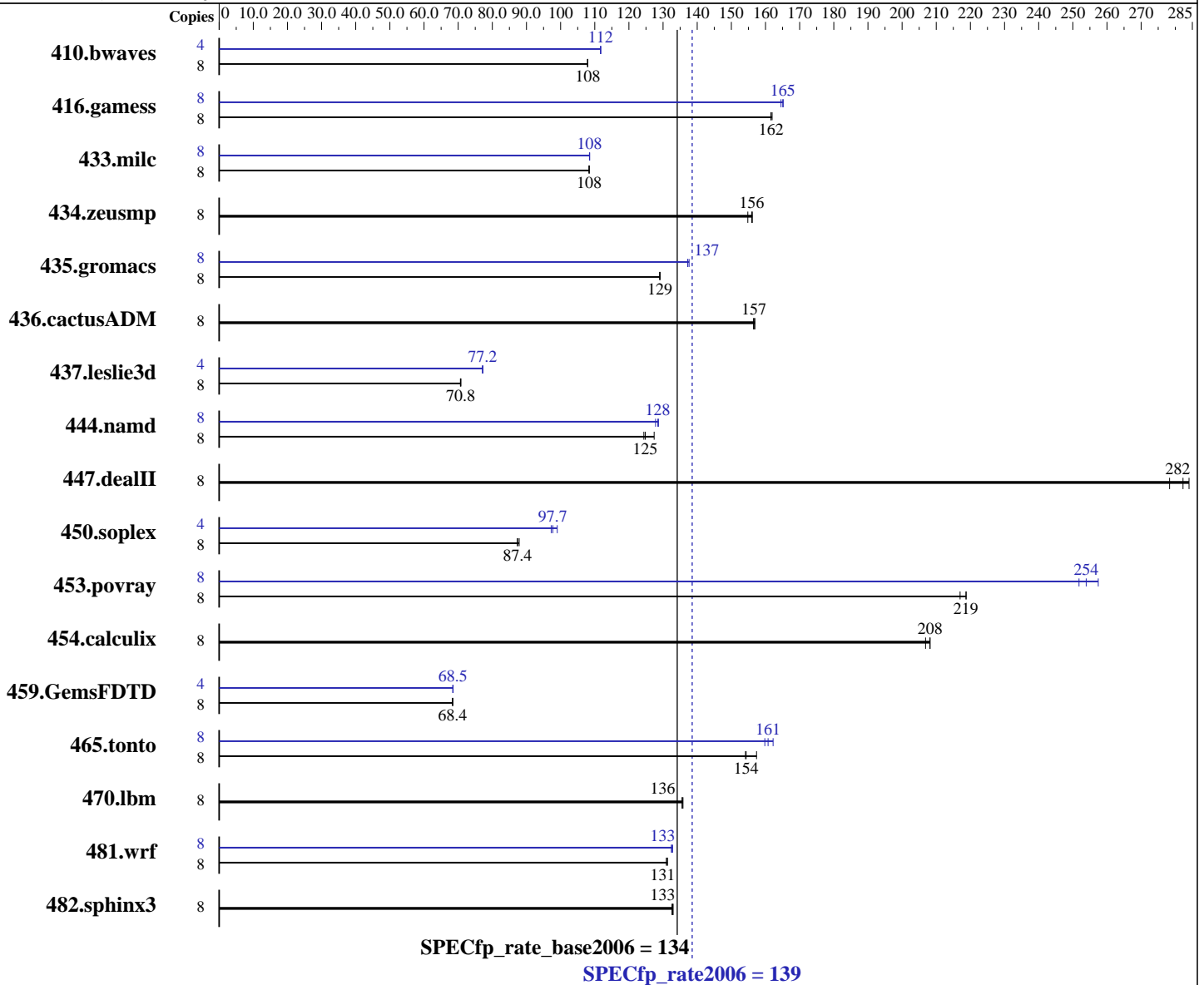|	
CPU2006 license: 19	**Test date:** May-2012
Test sponsor: Fujitsu	**Hardware Availability:** May-2012
Tested by: Fujitsu	**Software Availability:** Feb-2012

Copies 0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 285

Benchmark	Copies	Value
410.bwaves	4	112
	8	108
416.gamess	8	165
	8	162
433.milc	8	108
	8	108
434.zeusmp	8	156
435.gromacs	8	137
	8	129
436.cactusADM	8	157
437.leslie3d	4	77.2
	8	70.8
444.namd	8	128
	8	125
447.dealII	8	282
450.soplex	4	97.7
	8	87.4
453.povray	8	254
	8	219
454.calculix	8	208
459.GemsFDTD	4	68.5
	8	68.4
465.tonto	8	161
	8	154
470.lbm	8	136
481.wrf	8	133
	8	131
482.sphinx3	8	133

SPECfp_rate_base2006 = 134

SPECfp_rate2006 = 139

Hardware

CPU Name:	Intel Xeon E3-1240 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.8 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
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 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4

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L3 Cache:	8 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	**1007**	**108**	1008	108	1007	108	4	**487**	**112**	487	112	486	112
416.gamess	8	967	162	**969**	**162**	969	162	8	948	165	952	165	**949**	**165**
433.milc	8	**678**	**108**	678	108	678	108	8	677	108	677	109	**677**	**108**
434.zeusmp	8	**467**	**156**	466	156	470	155	8	**467**	**156**	466	156	470	155
435.gromacs	8	442	129	**443**	**129**	443	129	8	416	137	415	138	**416**	**137**
436.cactusADM	8	609	157	**610**	**157**	611	156	8	609	157	**610**	**157**	611	156
437.leslie3d	8	1062	70.8	1064	70.6	**1063**	**70.8**	4	**487**	**77.2**	487	77.2	488	77.1
444.namd	8	516	124	504	127	**514**	**125**	8	**499**	**128**	499	129	502	128
447.dealII	8	322	284	**324**	**282**	329	278	8	322	284	**324**	**282**	329	278
450.soplex	8	759	87.9	**763**	**87.4**	764	87.3	4	343	97.2	337	99.0	**341**	**97.7**
453.povray	8	195	219	**195**	**219**	196	217	8	**168**	**254**	165	257	169	252
454.calculix	8	317	208	319	207	**317**	**208**	8	317	208	319	207	**317**	**208**
459.GemsFDTD	8	1242	68.3	1240	68.4	**1241**	**68.4**	4	620	68.4	619	68.5	**620**	**68.5**
465.tonto	8	500	157	511	154	**510**	**154**	8	485	162	493	160	**490**	**161**
470.lbm	8	809	136	811	136	**810**	**136**	8	809	136	811	136	**810**	**136**
481.wrf	8	682	131	**681**	**131**	681	131	8	**674**	**133**	673	133	675	132
482.sphinx3	8	1176	133	**1174**	**133**	1173	133	8	1176	133	**1174**	**133**	1173	133

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

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General Notes (Continued)

Binaries compiled on a system with 2x E5-2650 CPU + 96 GB
memory using RHEL6.2
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
This result was measured on the PRIMERGY TX140S1p. The PRIMERGY TX140S1p
and the PRIMERGY TX120 S3p are electronically equivalent.
For information about Fujitsu please visit: http://www.fujitsu.com

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
465.tonto: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

```
       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: basepeak = yes
```

```
    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) -prof-use(pass 2) -static
```

```
    416.gamess: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

```
   459.GemsFDTD: -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
```

```
      465.tonto: -xAVX(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
```

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
435.gromacs: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
             -auto-p32 -ansi-alias -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/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml

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