SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX350 S8, Intel Xeon E5-2603 v2, 1.80 GHz

$SPECfp^{®}2006 =$ 51.3

$SPECfp\_base2006 =$ 49.9
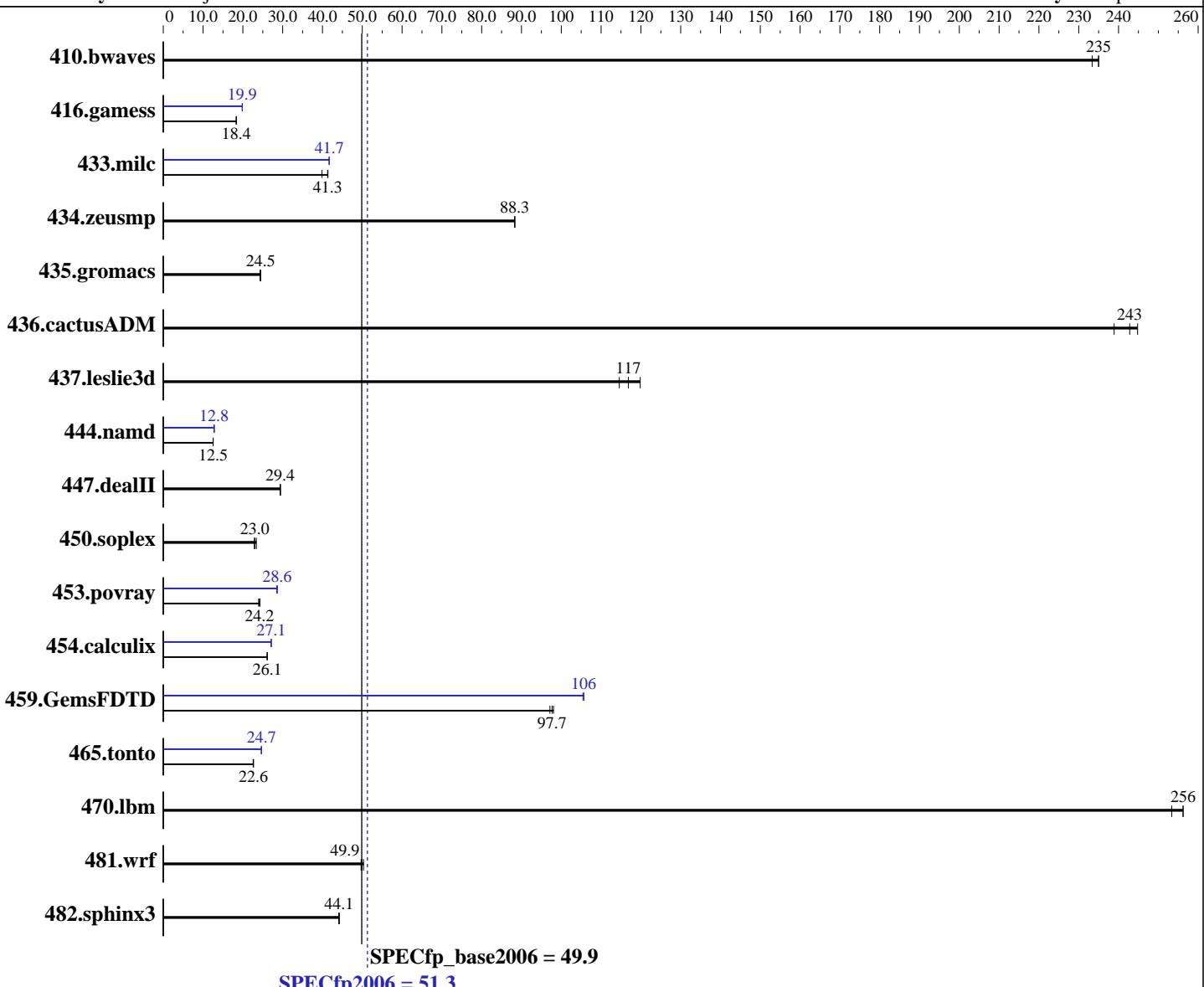
CPU2006 license: 19	**Test date:** Sep-2013
Test sponsor: Fujitsu	**Hardware Availability:** Oct-2013
Tested by: Fujitsu	**Software Availability:** Sep-2013

410.bwaves 235
416.gamess 19.9 / 18.4
433.milc 41.7 / 41.3
434.zeusmp 88.3
435.gromacs 24.5
436.cactusADM 243
437.leslie3d 117
444.namd 12.8 / 12.5
447.dealII 29.4
450.soplex 23.0
453.povray 28.6 / 24.2
454.calculix 27.1 / 26.1
459.GemsFDTD 106 / 97.7
465.tonto 24.7 / 22.6
470.lbm 256
481.wrf 49.9
482.sphinx3 44.1

SPECfp_base2006 = 49.9
SPECfp2006 = 51.3

Hardware
CPU Name: Intel Xeon E5-2603 v2
CPU Characteristics:
CPU MHz: 1800
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
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 6.4 (Santiago)
2.6.32-358.11.1.el6.x86_64
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4
Continued on next page

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L3 Cache:	10 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL9)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	58.2	233	**57.8**	**235**	57.8	235	58.2	233	**57.8**	**235**	57.8	235
416.gamess	1066	18.4	1068	18.3	**1067**	**18.4**	**986**	**19.9**	986	19.9	986	19.9
433.milc	**222**	**41.3**	230	39.9	222	41.4	220	41.7	**220**	**41.7**	220	41.7
434.zeusmp	103	88.3	**103**	**88.3**	103	88.3	103	88.3	**103**	**88.3**	103	88.3
435.gromacs	294	24.3	292	24.5	**292**	**24.5**	294	24.3	292	24.5	**292**	**24.5**
436.cactusADM	**49.2**	**243**	50.0	239	48.8	245	**49.2**	**243**	50.0	239	48.8	245
437.leslie3d	78.4	120	**80.4**	**117**	82.0	115	78.4	120	**80.4**	**117**	82.0	115
444.namd	640	12.5	640	12.5	**640**	**12.5**	627	12.8	627	12.8	**627**	**12.8**
447.dealII	**389**	**29.4**	389	29.4	389	29.4	**389**	**29.4**	389	29.4	389	29.4
450.soplex	357	23.4	364	22.9	**363**	**23.0**	357	23.4	364	22.9	**363**	**23.0**
453.povray	222	23.9	**220**	**24.2**	219	24.3	186	28.7	187	28.5	**186**	**28.6**
454.calculix	316	26.1	**316**	**26.1**	316	26.1	**304**	**27.1**	304	27.1	304	27.1
459.GemsFDTD	109	97.2	108	98.1	**109**	**97.7**	101	105	**100**	**106**	100	106
465.tonto	**435**	**22.6**	434	22.7	436	22.6	399	24.7	399	24.6	**399**	**24.7**
470.lbm	**53.6**	**256**	53.6	256	54.2	253	**53.6**	**256**	53.6	256	54.2	253
481.wrf	**224**	**49.9**	222	50.3	225	49.7	**224**	**49.9**	222	50.3	225	49.7
482.sphinx3	441	44.2	**441**	**44.1**	442	44.1	441	44.2	**441**	**44.1**	442	44.1

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

Operating System Notes

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

Platform Notes

    BIOS configuration:
    Energy Performance = Performance
    Utilization Profile = Unbalanced

General Notes

    Environment variables set by runspec before the start of the run:
    KMP_AFFINITY = "granularity=fine,compact,1,0"
    LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"

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General Notes (Continued)

```
OMP_NUM_THREADS = "8"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 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 RX350 S8. The PRIMERGY RX350 S8
 and the PRIMERGY TX300 S8 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 -parallel -opt-prefetch -ansi-alias
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
```

Peak Compiler Invocation

C benchmarks:
```
icc    -m64
```

C++ benchmarks:
```
icpc   -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

Peak Portability Flags

```
Same as Base Portability Flags
```

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) -auto-ilp32
              -ansi-alias

    470.lbm: basepeak = yes

  482.sphinx3: basepeak = yes
```

C++ benchmarks:

Continued on next page

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Peak Optimization Flags (Continued)

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: basepeak = yes

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: basepeak = yes

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-`

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: `-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 -opt-prefetch -parallel`

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: `-xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias`

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.xml

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