SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX500 S7, Intel Xeon E5-4603, 2.00 GHz

$SPECfp^{®}2006 =$ 52.3

$SPECfp\_base2006 =$ 50.1

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

SPECfp_base2006 = 50.1

SPECfp2006 = 52.3
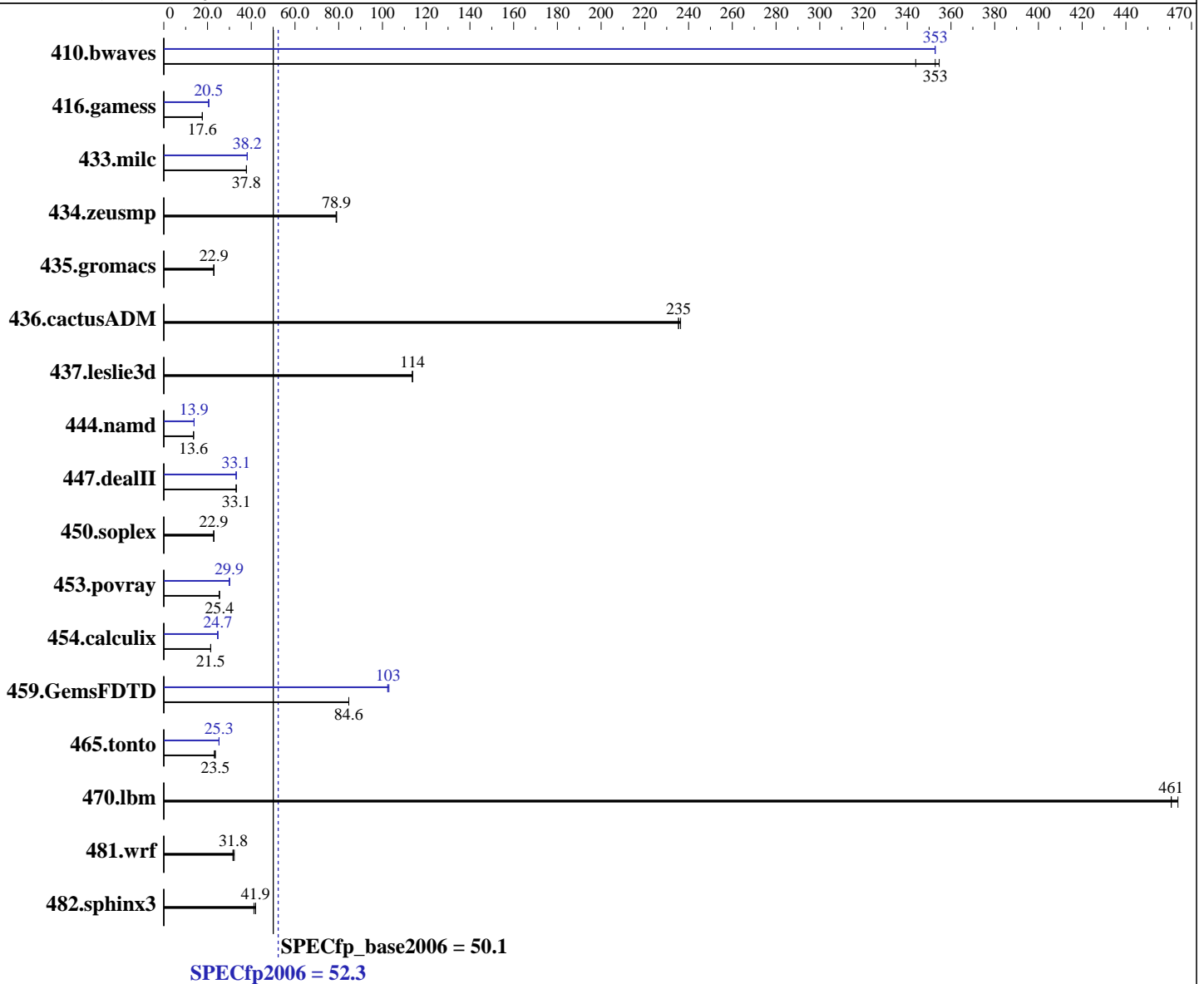
Hardware

CPU Name:	Intel Xeon E5-4603
CPU Characteristics:	
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	2,4 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 6.2 (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:	Yes
File System:	ext4

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L3 Cache:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	39.5	344	**38.5**	**353**	38.3	355	**38.5**	**353**	38.5	353	38.5	353
416.gamess	1109	17.7	**1112**	**17.6**	1112	17.6	**953**	**20.5**	957	20.5	951	20.6
433.milc	243	37.8	243	37.8	**243**	**37.8**	241	38.2	241	38.2	**241**	**38.2**
434.zeusmp	**115**	**78.9**	116	78.8	115	79.1	**115**	**78.9**	116	78.8	115	79.1
435.gromacs	**312**	**22.9**	311	23.0	313	22.8	**312**	**22.9**	311	23.0	313	22.8
436.cactusADM	50.6	236	**50.8**	**235**	50.8	235	50.6	236	**50.8**	**235**	50.8	235
437.leslie3d	82.7	114	82.7	114	**82.7**	**114**	82.7	114	82.7	114	**82.7**	**114**
444.namd	**590**	**13.6**	590	13.6	590	13.6	579	13.9	579	13.8	**579**	**13.9**
447.dealII	**345**	**33.1**	346	33.1	345	33.1	345	33.2	**345**	**33.1**	346	33.1
450.soplex	365	22.8	**365**	**22.9**	364	22.9	365	22.8	**365**	**22.9**	364	22.9
453.povray	209	25.5	**209**	**25.4**	210	25.3	176	30.1	**178**	**29.9**	178	29.9
454.calculix	384	21.5	**384**	**21.5**	385	21.4	**333**	**24.7**	336	24.5	333	24.8
459.GemsFDTD	125	84.6	**125**	**84.6**	125	84.6	104	102	103	103	**103**	**103**
465.tonto	**418**	**23.5**	426	23.1	417	23.6	**389**	**25.3**	390	25.2	389	25.3
470.lbm	29.8	461	29.6	464	**29.8**	**461**	29.8	461	29.6	464	**29.8**	**461**
481.wrf	346	32.2	**352**	**31.8**	353	31.6	346	32.2	**352**	**31.8**	353	31.6
482.sphinx3	**465**	**41.9**	464	42.0	473	41.2	**465**	**41.9**	464	42.0	473	41.2

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"
Transparent Huge Pages disabled with:
echo never  > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
Frequency Floor Override = Enable
```

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General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB
 memory using RHEL6.2
 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 -parallel -opt-prefetch
-ansi-alias
```

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

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

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -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) -static -auto-ilp32
          -ansi-alias
```

```
470.lbm: basepeak = yes
```

```
482.sphinx3: basepeak = yes
```

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Peak Optimization Flags (Continued)

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: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`
> `-ansi-alias`

> 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: `-xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel`
> `-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: `basepeak = yes`

> 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) -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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html

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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

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

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