SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX2540M1, Intel Xeon E5-2667 v3, 3.20 GHz

$SPECfp^{®}2006 =$ 118
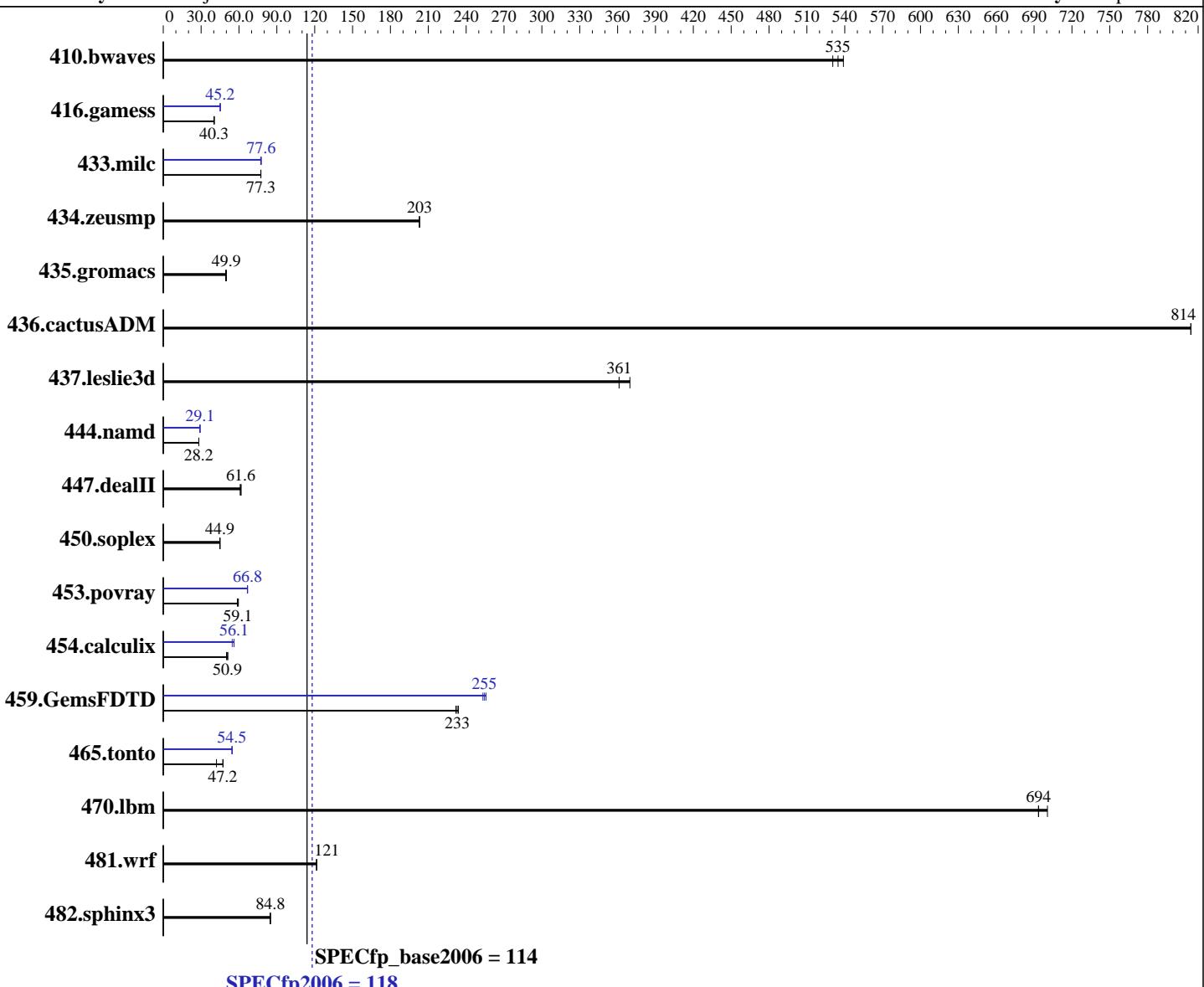
$SPECfp\_base2006 =$ 114

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Aug-2014
Hardware Availability: Sep-2014
Software Availability: Sep-2013

Benchmark	Value
410.bwaves	535
416.gamess	45.2 / 40.3
433.milc	77.6 / 77.3
434.zeusmp	203
435.gromacs	49.9
436.cactusADM	814
437.leslie3d	361
444.namd	29.1 / 28.2
447.dealII	61.6
450.soplex	44.9
453.povray	66.8 / 59.1
454.calculix	56.1 / 50.9
459.GemsFDTD	255 / 233
465.tonto	54.5 / 47.2
470.lbm	694
481.wrf	121
482.sphinx3	84.8

SPECfp_base2006 = 114
SPECfp2006 = 118

Hardware

CPU Name: Intel Xeon E5-2667 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 3200
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 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: SLES11 Linux Enterprise Server SP3 (x86_64) 3.0.76-0.11-default
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
System State: Run level 3 (multi-user)
Continued on next page

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L3 Cache:	20 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)	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	25.6	531	25.2	539	**25.4**	**535**	25.6	531	25.2	539	**25.4**	**535**
416.gamess	**485**	**40.3**	485	40.4	487	40.2	**433**	**45.2**	433	45.2	435	45.0
433.milc	119	77.3	119	77.4	**119**	**77.3**	119	77.2	**118**	**77.6**	118	77.6
434.zeusmp	44.8	203	44.8	203	**44.8**	**203**	44.8	203	44.8	203	**44.8**	**203**
435.gromacs	**143**	**49.9**	143	50.0	144	49.4	**143**	**49.9**	143	50.0	144	49.4
436.cactusADM	**14.7**	**814**	14.7	814	14.7	814	**14.7**	**814**	14.7	814	14.7	814
437.leslie3d	**26.0**	**361**	25.4	370	26.0	361	**26.0**	**361**	25.4	370	26.0	361
444.namd	**285**	**28.2**	285	28.2	285	28.2	275	29.1	276	29.1	**276**	**29.1**
447.dealII	186	61.6	**186**	**61.6**	188	60.9	186	61.6	**186**	**61.6**	188	60.9
450.soplex	186	44.9	**186**	**44.9**	186	44.9	186	44.9	**186**	**44.9**	186	44.9
453.povray	89.4	59.5	**90.0**	**59.1**	90.6	58.7	**79.7**	**66.8**	79.6	66.8	79.8	66.7
454.calculix	**162**	**50.9**	161	51.1	165	50.1	**147**	**56.1**	147	56.1	151	54.6
459.GemsFDTD	45.8	232	45.4	234	**45.6**	**233**	41.5	256	41.9	253	**41.7**	**255**
465.tonto	**208**	**47.2**	233	42.2	208	47.4	180	54.6	**181**	**54.5**	181	54.5
470.lbm	19.8	694	19.6	701	**19.8**	**694**	19.8	694	19.6	701	**19.8**	**694**
481.wrf	**92.0**	**121**	92.0	121	91.8	122	**92.0**	**121**	92.0	121	91.8	122
482.sphinx3	229	85.0	230	84.7	**230**	**84.8**	229	85.0	230	84.7	**230**	**84.8**

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
CPU C1E Support = disabled
```

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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"
OMP_NUM_THREADS = "16"

 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>

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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
```

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Base Optimization Flags

C benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -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: -xCORE-AVX2(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
```

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Peak Optimization Flags (Continued)

C++ benchmarks:

```
444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes
```

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

Tested with SPEC CPU2006 v1.2.
Report generated on Fri Sep 12 12:38:52 2014 by SPEC CPU2006 PS/PDF formatter v6401.