SPEC® CFP2006 Result
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Supermicro

SuperServer 6027R-WRF (X9DRW-iF, Intel E5-2660)

$SPECfp^{®}2006 =$ 78.3

$SPECfp\_base2006 =$ 74.2

CPU2006 license: 001176		**Test date:** Mar-2012
Test sponsor: Supermicro		**Hardware Availability:** Mar-2011
Tested by: Supermicro		**Software Availability:** Dec-2011

410.bwaves 343 / 341
416.gamess 31.5 / 26.3
433.milc 58.1 / 56.9
434.zeusmp 139
435.gromacs 25.7
436.cactusADM 462
437.leslie3d 202
444.namd 20.8 / 20.5
447.dealII 45.9
450.soplex 39.9
453.povray 45.1 / 38.2
454.calculix 37.2 / 34.0
459.GemsFDTD 166 / 138
465.tonto 38.4 / 30.1
470.lbm 424
481.wrf 66.8
482.sphinx3 63.7 / 63.2

SPECfp_base2006 = 74.2

SPECfp2006 = 78.3

Hardware

CPU Name:	Intel Xeon E5-2660
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2200
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:	Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 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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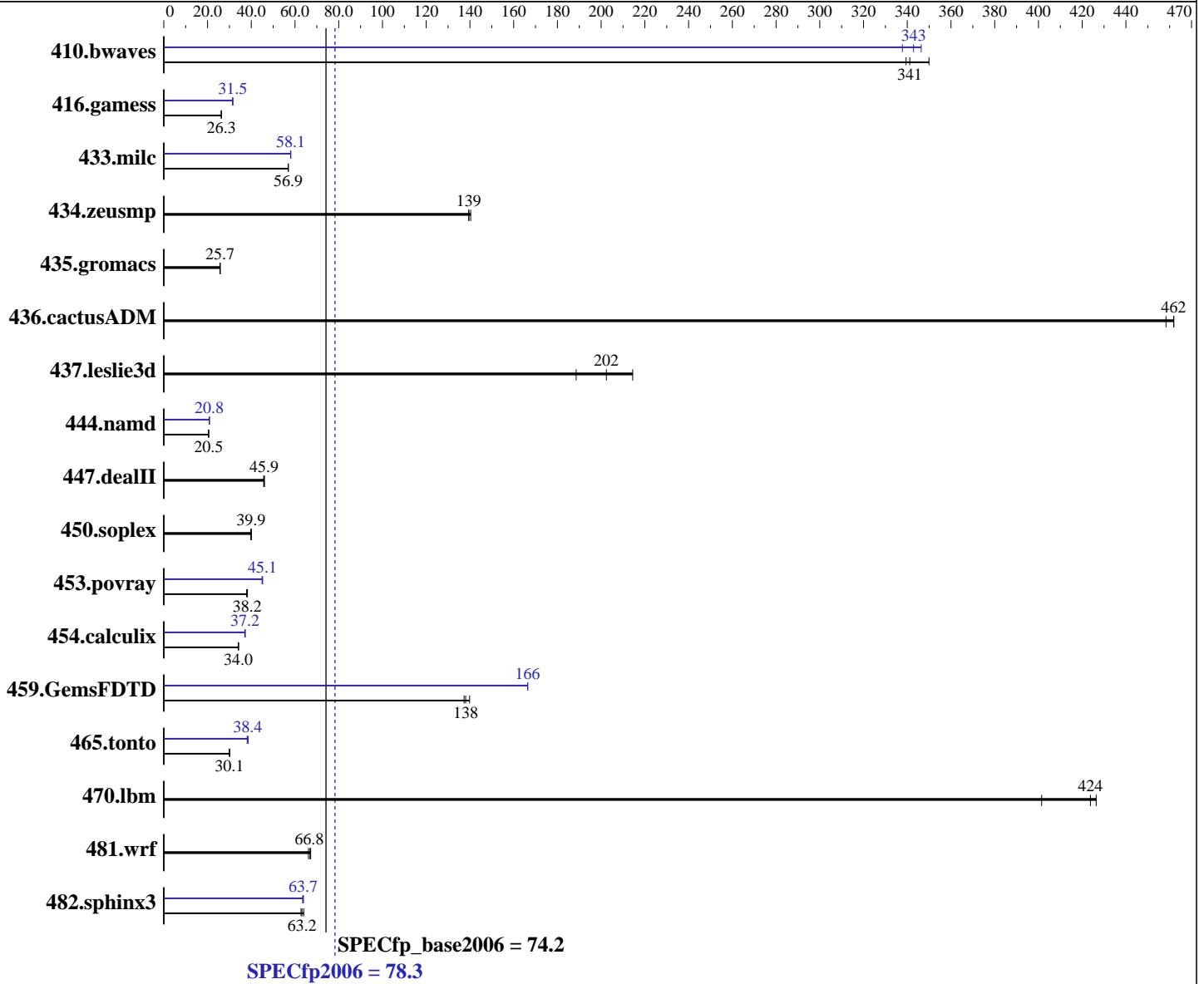**CPU2006 license:** 001176　　　　　　　　　　　　　　　　　　**Test date:** Mar-2012
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L3 Cache:	20 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)	Other Software:	None
Disk Subsystem:	1 x 1 TB SATA II, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	40.0	339	38.8	350	**39.8**	**341**	40.2	338	**39.6**	**343**	39.2	346
416.gamess	745	26.3	744	26.3	**744**	**26.3**	622	31.5	**622**	**31.5**	620	31.6
433.milc	161	56.9	**161**	**56.9**	161	56.9	158	58.0	158	58.1	**158**	**58.1**
434.zeusmp	65.2	139	**65.2**	**139**	64.8	140	65.2	139	**65.2**	**139**	64.8	140
435.gromacs	278	25.7	277	25.8	**277**	**25.7**	278	25.7	277	25.8	**277**	**25.7**
436.cactusADM	**25.9**	**462**	26.1	458	25.9	462	**25.9**	**462**	26.1	458	25.9	462
437.leslie3d	49.8	189	**46.4**	**202**	43.8	214	49.8	189	**46.4**	**202**	43.8	214
444.namd	391	20.5	**391**	**20.5**	392	20.5	**385**	**20.8**	385	20.8	385	20.8
447.dealII	**249**	**45.9**	250	45.7	249	46.0	**249**	**45.9**	250	45.7	249	46.0
450.soplex	208	40.1	**209**	**39.9**	209	39.8	208	40.1	**209**	**39.9**	209	39.8
453.povray	**139**	**38.2**	139	38.3	140	37.9	**118**	**45.1**	118	45.2	118	44.9
454.calculix	242	34.0	**242**	**34.0**	241	34.3	223	37.0	222	37.2	**222**	**37.2**
459.GemsFDTD	75.9	140	**76.9**	**138**	77.3	137	63.8	166	63.8	166	**63.8**	**166**
465.tonto	328	30.0	**327**	**30.1**	327	30.1	255	38.6	258	38.1	**256**	**38.4**
470.lbm	**32.4**	**424**	32.2	426	34.2	401	**32.4**	**424**	32.2	426	34.2	401
481.wrf	166	67.2	**167**	**66.8**	169	66.1	166	67.2	**167**	**66.8**	169	66.1
482.sphinx3	305	64.0	311	62.8	**308**	**63.2**	305	63.9	**306**	**63.7**	307	63.5

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"
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/test/cpu2006/libs/32:/home/test/cpu2006/libs/64"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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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
```

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
```

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Tested by: Supermicro

Test date: Mar-2012
Hardware Availability: Mar-2011
Software Availability: Dec-2011

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: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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: `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`

Continued on next page

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Peak Optimization Flags (Continued)

```
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: -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 file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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 Thu Jul 24 07:27:53 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 10 April 2012.