SPEC® CFP2006 Result
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Supermicro

SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2667)
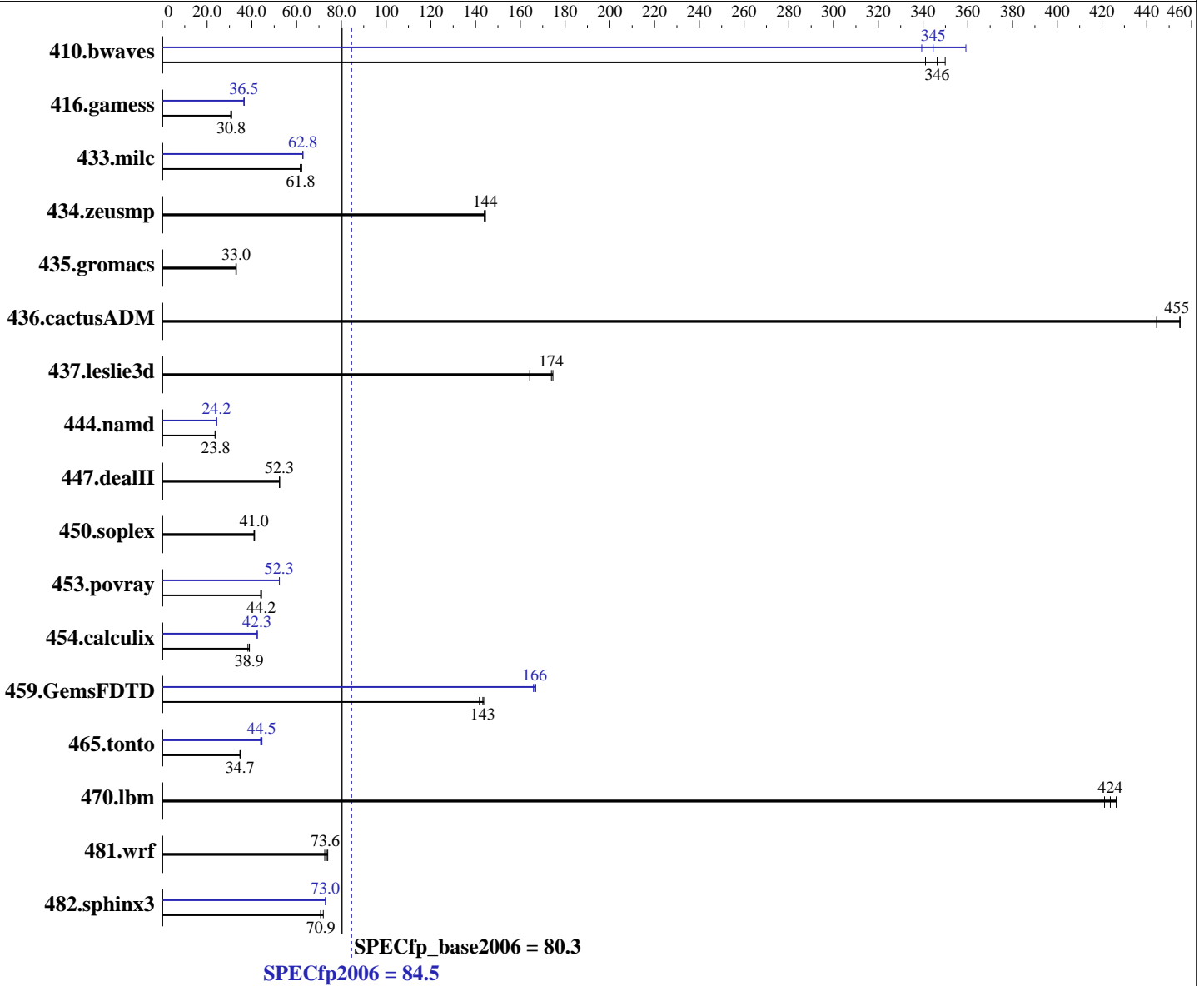
$SPECfp®2006 =$ 84.5

$SPECfp\_base2006 =$ 80.3

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

Benchmark results:

- **410.bwaves**: 345 / 346
- **416.gamess**: 36.5 / 30.8
- **433.milc**: 62.8 / 61.8
- **434.zeusmp**: 144
- **435.gromacs**: 33.0
- **436.cactusADM**: 455
- **437.leslie3d**: 174
- **444.namd**: 24.2 / 23.8
- **447.dealII**: 52.3
- **450.soplex**: 41.0
- **453.povray**: 52.3 / 44.2
- **454.calculix**: 42.3 / 38.9
- **459.GemsFDTD**: 166 / 143
- **465.tonto**: 44.5 / 34.7
- **470.lbm**: 424
- **481.wrf**: 73.6
- **482.sphinx3**: 73.0 / 70.9

SPECfp_base2006 = 80.3
SPECfp2006 = 84.5

Hardware

CPU Name:	Intel Xeon E5-2667
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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)

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L3 Cache:	15 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	38.8	350	**39.2**	**346**	39.8	341	**39.4**	**345**	40.0	339	37.8	359
416.gamess	**636**	**30.8**	641	30.6	633	31.0	537	36.4	535	36.6	**536**	**36.5**
433.milc	**149**	**61.8**	149	61.7	147	62.3	**146**	**62.8**	146	62.9	146	62.8
434.zeusmp	63.2	144	63.0	144	**63.0**	**144**	63.2	144	63.0	144	**63.0**	**144**
435.gromacs	**217**	**33.0**	217	32.9	216	33.1	**217**	**33.0**	217	32.9	216	33.1
436.cactusADM	26.9	444	26.3	455	**26.3**	**455**	26.9	444	26.3	455	**26.3**	**455**
437.leslie3d	57.2	164	53.8	175	**54.1**	**174**	57.2	164	53.8	175	**54.1**	**174**
444.namd	337	23.8	**337**	**23.8**	341	23.5	331	24.2	**331**	**24.2**	331	24.2
447.dealII	219	52.3	218	52.4	**219**	**52.3**	219	52.3	218	52.4	**219**	**52.3**
450.soplex	**203**	**41.0**	203	41.0	202	41.2	**203**	**41.0**	203	41.0	202	41.2
453.povray	**120**	**44.2**	120	44.3	121	43.9	**102**	**52.3**	102	52.3	102	52.3
454.calculix	212	38.9	**212**	**38.9**	216	38.2	194	42.5	**195**	**42.3**	197	42.0
459.GemsFDTD	73.9	144	74.9	142	**74.1**	**143**	63.6	167	64.0	166	**63.8**	**166**
465.tonto	283	34.8	**283**	**34.7**	283	34.7	224	43.9	**221**	**44.5**	221	44.5
470.lbm	32.6	421	32.2	426	**32.4**	**424**	32.6	421	32.2	426	**32.4**	**424**
481.wrf	154	72.6	**152**	**73.6**	151	73.9	154	72.6	**152**	**73.6**	151	73.9
482.sphinx3	**275**	**70.9**	271	71.9	276	70.7	**267**	**73.0**	267	72.9	267	73.0

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 enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
```

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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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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

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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.

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