SPEC® CFP2006 Result
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Supermicro

SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2665)

$SPECfp^{®}2006 =$ 79.6
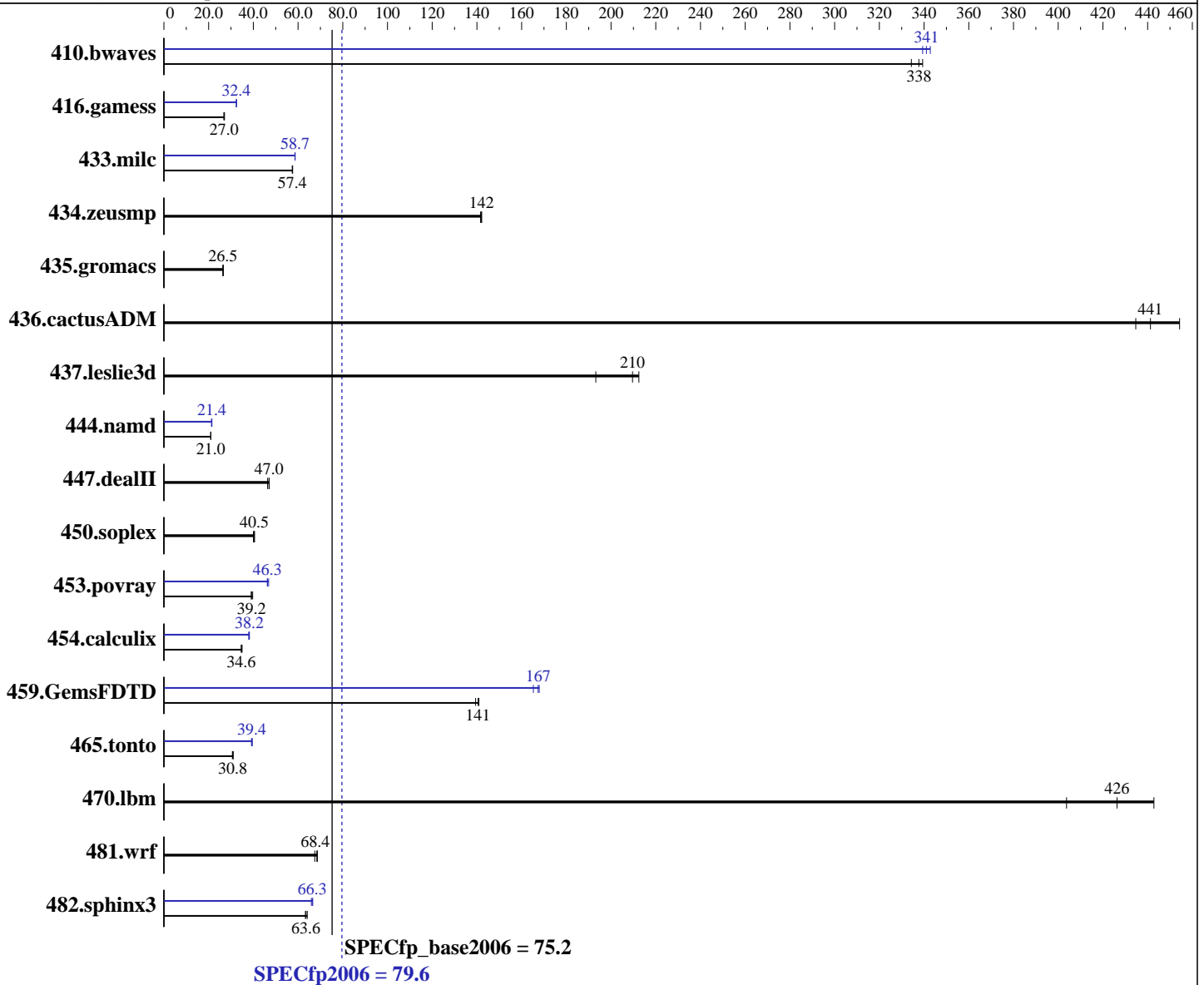
$SPECfp\_base2006 =$ 75.2

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

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

SPECfp_base2006 = 75.2

SPECfp2006 = 79.6

	410.bwaves	341 / 338
	416.gamess	32.4 / 27.0
	433.milc	58.7 / 57.4
	434.zeusmp	142
	435.gromacs	26.5
	436.cactusADM	441
	437.leslie3d	210
	444.namd	21.4 / 21.0
	447.dealII	47.0
	450.soplex	40.5
	453.povray	46.3 / 39.2
	454.calculix	38.2 / 34.6
	459.GemsFDTD	167 / 141
	465.tonto	39.4 / 30.8
	470.lbm	426
	481.wrf	68.4
	482.sphinx3	66.3 / 63.6

Hardware

CPU Name: Intel Xeon E5-2665
CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz: 2400
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)

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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 Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	40.0	339	40.6	334	**40.2**	**338**	**39.8**	**341**	40.0	339	39.6	343
416.gamess	723	27.1	**726**	**27.0**	730	26.8	604	32.4	**604**	**32.4**	603	32.5
433.milc	159	57.6	**160**	**57.4**	160	57.4	**156**	**58.7**	157	58.6	156	58.7
434.zeusmp	64.0	142	64.2	142	**64.1**	**142**	64.0	142	64.2	142	**64.1**	**142**
435.gromacs	**270**	**26.5**	268	26.6	271	26.4	**270**	**26.5**	268	26.6	271	26.4
436.cactusADM	**27.1**	**441**	26.3	454	27.5	435	**27.1**	**441**	26.3	454	27.5	435
437.leslie3d	48.7	193	44.2	212	**44.8**	**210**	48.7	193	44.2	212	**44.8**	**210**
444.namd	**382**	**21.0**	383	20.9	382	21.0	**374**	**21.4**	374	21.5	377	21.3
447.dealII	**243**	**47.0**	247	46.4	243	47.1	**243**	**47.0**	247	46.4	243	47.1
450.soplex	208	40.0	**206**	**40.5**	206	40.5	208	40.0	**206**	**40.5**	206	40.5
453.povray	134	39.7	**136**	**39.2**	136	39.1	115	46.3	**115**	**46.3**	114	46.8
454.calculix	**238**	**34.6**	238	34.6	236	35.0	**216**	**38.2**	216	38.2	218	37.9
459.GemsFDTD	**75.5**	**141**	75.3	141	76.1	139	**63.4**	**167**	63.2	168	64.2	165
465.tonto	317	31.0	321	30.6	**319**	**30.8**	**250**	**39.4**	251	39.2	249	39.5
470.lbm	31.0	443	34.0	404	**32.2**	**426**	31.0	443	34.0	404	**32.2**	**426**
481.wrf	**163**	**68.4**	166	67.5	163	68.6	**163**	**68.4**	166	67.5	163	68.6
482.sphinx3	**307**	**63.6**	304	64.1	308	63.3	**294**	**66.3**	293	66.6	296	65.9

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 = "16"

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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