SPEC® CFP2006 Result
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Supermicro

SuperServer 1026T-6RTF+ (X8DTU-6TF+, Intel Xeon E5607)

$SPECfp®\_rate2006 =$ 138
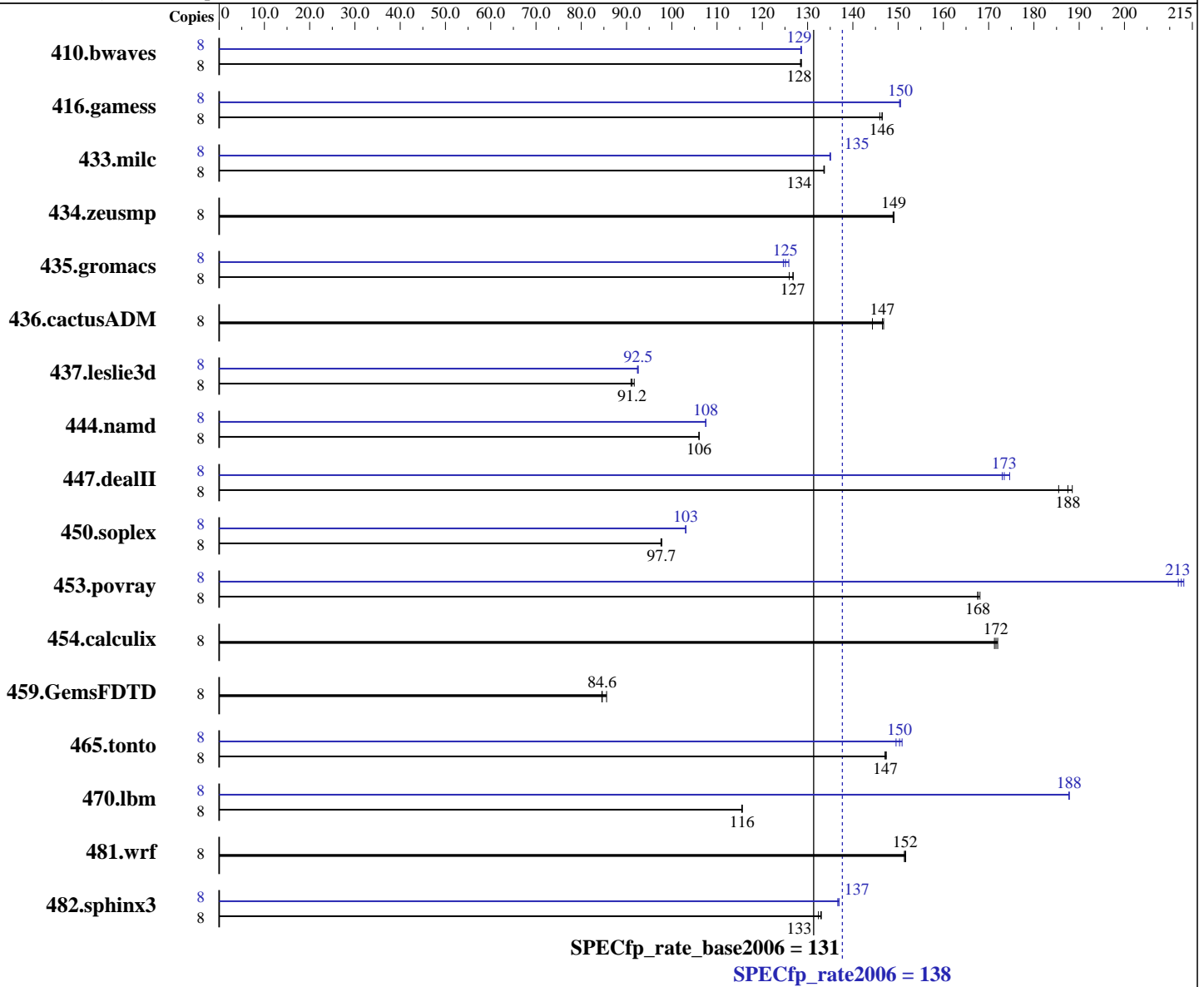
SPECfp_rate_base2006 = 131

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Mar-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

	Copies	
410.bwaves	8	129
	8	128
416.gamess	8	150
	8	146
433.milc	8	135
	8	134
434.zeusmp	8	149
435.gromacs	8	125
	8	127
436.cactusADM	8	147
437.leslie3d	8	92.5
	8	91.2
444.namd	8	108
	8	106
447.dealII	8	173
	8	188
450.soplex	8	103
	8	97.7
453.povray	8	213
	8	168
454.calculix	8	172
459.GemsFDTD	8	84.6
465.tonto	8	150
	8	147
470.lbm	8	188
	8	116
481.wrf	8	152
482.sphinx3	8	137
	8	133

SPECfp_rate_base2006 = 131

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Hardware

CPU Name:	Intel Xeon E5607
CPU Characteristics:	
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
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:	SUSE Linux Enterprise Server 11 (x86_64) SP1 Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 x 4 GB 2Rx4 PC3-8500R-7, ECC)
Disk Subsystem:	1 x 600 GB SAS 6.0 Gb/s, 10000 RPM
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	846	128	**846**	**128**	845	129	8	846	129	845	129	**846**	**129**
416.gamess	8	1069	147	1073	146	**1070**	**146**	8	1041	151	**1041**	**150**	1042	150
433.milc	8	**549**	**134**	549	134	550	134	8	544	135	**544**	**135**	544	135
434.zeusmp	8	488	149	489	149	**488**	**149**	8	488	149	489	149	**488**	**149**
435.gromacs	8	**451**	**127**	450	127	454	126	8	**457**	**125**	454	126	458	125
436.cactusADM	8	**652**	**147**	651	147	662	144	8	**652**	**147**	651	147	662	144
437.leslie3d	8	**824**	**91.2**	826	91.0	820	91.7	8	812	92.6	**813**	**92.5**	814	92.4
444.namd	8	**605**	**106**	605	106	605	106	8	597	108	597	107	**597**	**108**
447.dealII	8	**488**	**188**	486	188	493	185	8	529	173	524	175	**528**	**173**
450.soplex	8	684	97.6	682	97.8	**683**	**97.7**	8	647	103	647	103	**647**	**103**
453.povray	8	**254**	**168**	254	168	253	168	8	200	213	201	212	**200**	**213**
454.calculix	8	384	172	385	171	**385**	**172**	8	384	172	385	171	**385**	**172**
459.GemsFDTD	8	**1003**	**84.6**	1004	84.5	992	85.6	8	**1003**	**84.6**	1004	84.5	992	85.6
465.tonto	8	535	147	**535**	**147**	534	147	8	526	150	522	151	**524**	**150**
470.lbm	8	952	115	**951**	**116**	951	116	8	586	188	585	188	**585**	**188**
481.wrf	8	590	151	**590**	**152**	589	152	8	590	151	**590**	**152**	589	152
482.sphinx3	8	1178	132	1172	133	**1173**	**133**	8	1141	137	**1139**	**137**	1139	137

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
   The config file option 'submit' was used.
    numactl was used to bind copies to the cores
```

Operating System Notes

```
   'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
   Hugepages was enabled with the following:
   nodev   /mnt/hugepages   hugetlbfs  defaults   0 0' added to /etc/fstab
   echo 3600 > /proc/sys/vm/nr_hugepages
   export HUGETLB_MORECORE=yes
```

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Platform Notes

Fan speed set to Full Speed and Data Reuse Optimization disabled in BIOS Setup.

General Notes

Binaries compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

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:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

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CPU2006 license: 001176
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Test date: Mar-2011
Hardware Availability: Feb-2011
Software Availability: Jan-2011

Base Optimization Flags (Continued)

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc    -m64
```

```
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):
```
icpc   -m64
```

```
450.soplex: icpc -m32
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

Peak 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
    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
```

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Tested by: Supermicro

Test date: Mar-2011
Hardware Availability: Feb-2011
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Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32`

470.lbm: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3`
`-ansi-alias -opt-prefetch -static -auto-ilp32`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2`

C++ benchmarks:

444.namd: `-xSSE4.2(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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32`

450.soplex: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

453.povray: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

Fortran benchmarks:

410.bwaves: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -static`

416.gamess: `-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 -scalar-rep- -static`

434.zeusmp: `basepeak = yes`

437.leslie3d: `-xSSE4.2 -ipo -O3 -no-prec-div`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

459.GemsFDTD: `basepeak = yes`

465.tonto: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto`
`-inline-calloc -opt-malloc-options=3`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

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

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch`
`-static -auto-ilp32`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.xml

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