SPEC® CFP2006 Result

Supermicro

$SPECfp®\_rate2006 = 495$

SuperServer 6027TR-DTRF (X9DRT-HF, Intel E5-2690)

$SPECfp\_rate\_base2006 = 479$

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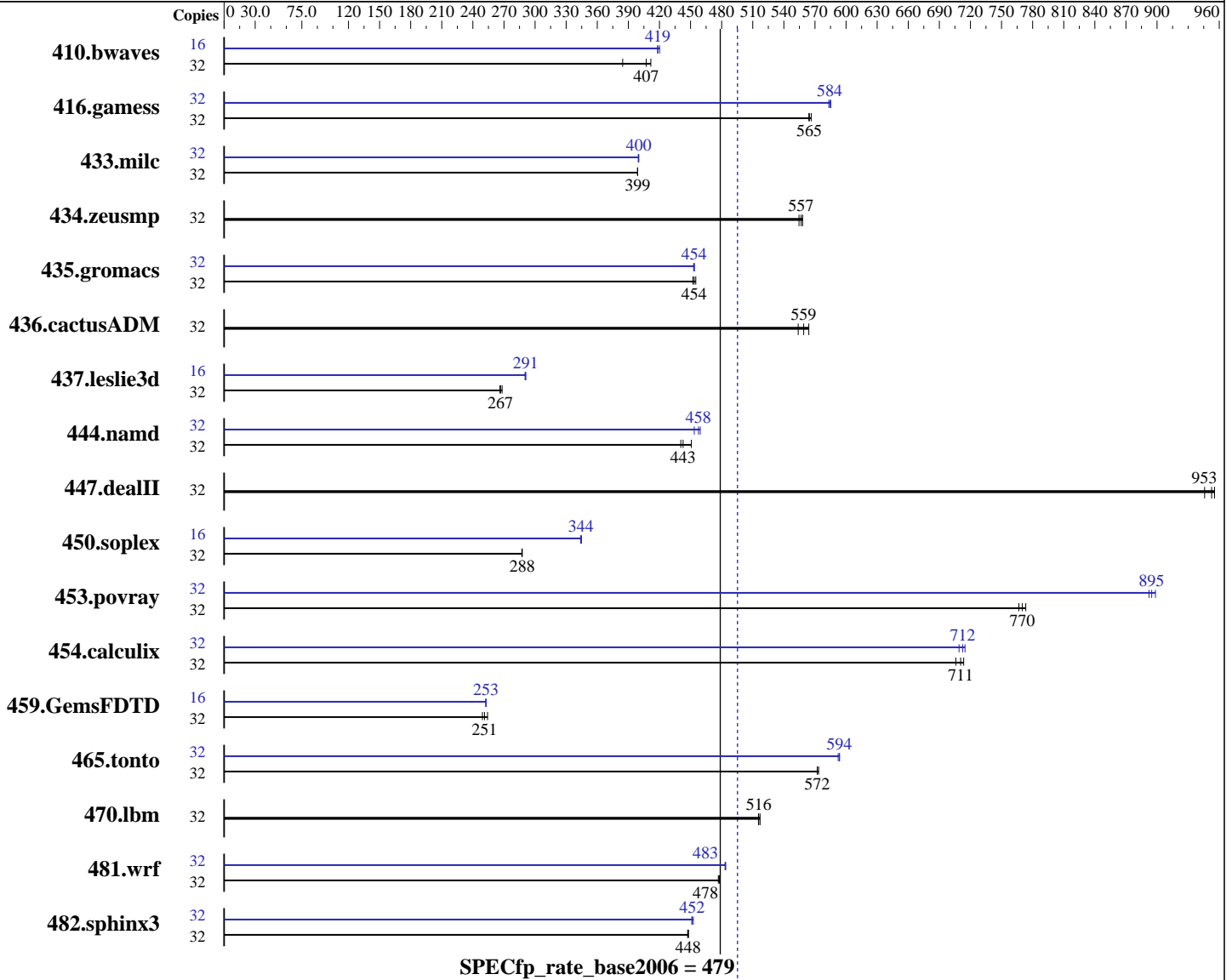**Test sponsor:** Supermicro
Tested by: Supermicro

Test date: Jan-2012
Hardware Availability: Mar-2012
Software Availability: Oct-2011

Benchmark	Copies	Result
410.bwaves	16	419
	32	407
416.gamess	32	584
	32	565
433.milc	32	400
	32	399
434.zeusmp	32	557
435.gromacs	32	454
	32	454
436.cactusADM	32	559
437.leslie3d	16	291
	32	267
444.namd	32	458
	32	443
447.dealII	32	953
450.soplex	16	344
	32	288
453.povray	32	895
	32	770
454.calculix	32	712
	32	711
459.GemsFDTD	16	253
	32	251
465.tonto	32	594
	32	572
470.lbm	32	516
481.wrf	32	483
	32	478
482.sphinx3	32	452
	32	448

SPECfp_rate_base2006 = 479

SPECfp_rate2006 = 495

Hardware

CPU Name:	Intel Xeon E5-2690
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	2 chip
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 6.1 (Santiago) 2.6.32-131.0.15.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:	No
File System:	ext4

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6027TR-DTRF (X9DRT-HF, Intel E5-2690)

SPECfp_rate2006 =	495
SPECfp_rate_base2006 =	479

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

L3 Cache:	20 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 1 TB SATA II, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	1056	412	**1068**	**407**	1131	385	16	520	418	517	420	**520**	**419**
416.gamess	32	**1110**	**565**	1106	566	1111	564	32	**1072**	**584**	1074	583	1070	585
433.milc	32	**736**	**399**	736	399	737	399	32	**734**	**400**	734	400	735	400
434.zeusmp	32	522	558	525	555	**523**	**557**	32	522	558	525	555	**523**	**557**
435.gromacs	32	**504**	**454**	502	455	505	452	32	504	453	**504**	**454**	504	454
436.cactusADM	32	690	554	**684**	**559**	678	564	32	690	554	**684**	**559**	678	564
437.leslie3d	32	1122	268	**1128**	**267**	1130	266	16	**517**	**291**	517	291	518	290
444.namd	32	569	451	**580**	**443**	582	441	32	559	459	566	454	**561**	**458**
447.dealII	32	**384**	**953**	383	955	387	946	32	**384**	**953**	383	955	387	946
450.soplex	32	**928**	**288**	929	287	928	288	16	388	344	387	345	**388**	**344**
453.povray	32	222	767	220	773	**221**	**770**	32	**190**	**895**	191	892	189	898
454.calculix	32	374	706	**372**	**711**	370	713	32	369	715	**371**	**712**	372	709
459.GemsFDTD	32	1362	249	**1351**	**251**	1336	254	16	672	253	672	252	**672**	**253**
465.tonto	32	**550**	**572**	549	574	550	572	32	**530**	**594**	530	594	532	592
470.lbm	32	850	517	**852**	**516**	853	515	32	850	517	**852**	**516**	853	515
481.wrf	32	750	477	748	478	**749**	**478**	32	**739**	**483**	739	484	740	483
482.sphinx3	32	1395	447	1392	448	**1393**	**448**	32	1382	451	**1381**	**452**	1378	453

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

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:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6027TR-DTRF (X9DRT-HF, Intel E5-2690)

$SPECfp_rate2006 = $ 495

$SPECfp_rate_base2006 = $ 479

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

General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages disabled with:
echo never  > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>         /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

SuperServer 6027TR-DTRF (X9DRT-HF, Intel E5-2690)

$SPECfp\_rate2006 =$ 495

$SPECfp\_rate\_base2006 =$ 479

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

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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
```

Supermicro

SuperServer 6027TR-DTRF (X9DRT-HF, Intel E5-2690)

$SPECfp\_rate2006 =$ 495

$SPECfp\_rate\_base2006 =$ 479

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

Peak Portability Flags (Continued)

```
454.calculix: -DSPEC_CPU_LP64 -nofor_main
   465.tonto: -DSPEC_CPU_LP64
    470.lbm: -DSPEC_CPU_LP64
    481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

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
          -opt-mem-layout-trans=3
```

```
470.lbm: basepeak = yes
```

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

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: -xAVX(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
```

```
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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -static
```

```
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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

```
459.GemsFDTD: -xAVX(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
```

Supermicro

SuperServer 6027TR-DTRF (X9DRT-HF, Intel E5-2690)

$SPECfp\_rate2006 =$ 495

$SPECfp\_rate\_base2006 =$ 479

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

Peak Optimization Flags (Continued)

```
465.tonto: -xAVX(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
```

Benchmarks using both Fortran and C:

```
435.gromacs: -xAVX(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 -opt-mem-layout-trans=3
```

```
436.cactusADM: basepeak = yes
```

```
454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
              -opt-mem-layout-trans=3
```

```
481.wrf: Same as 454.calculix
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.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 02:44:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 27 March 2012.