



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 1027GR-TRFT+  
(X9DRG-HTF+, Intel Xeon E5-2640 v2)

SPECfp<sup>®</sup>\_rate2006 = 457

SPECfp\_rate\_base2006 = 449

CPU2006 license: 001176

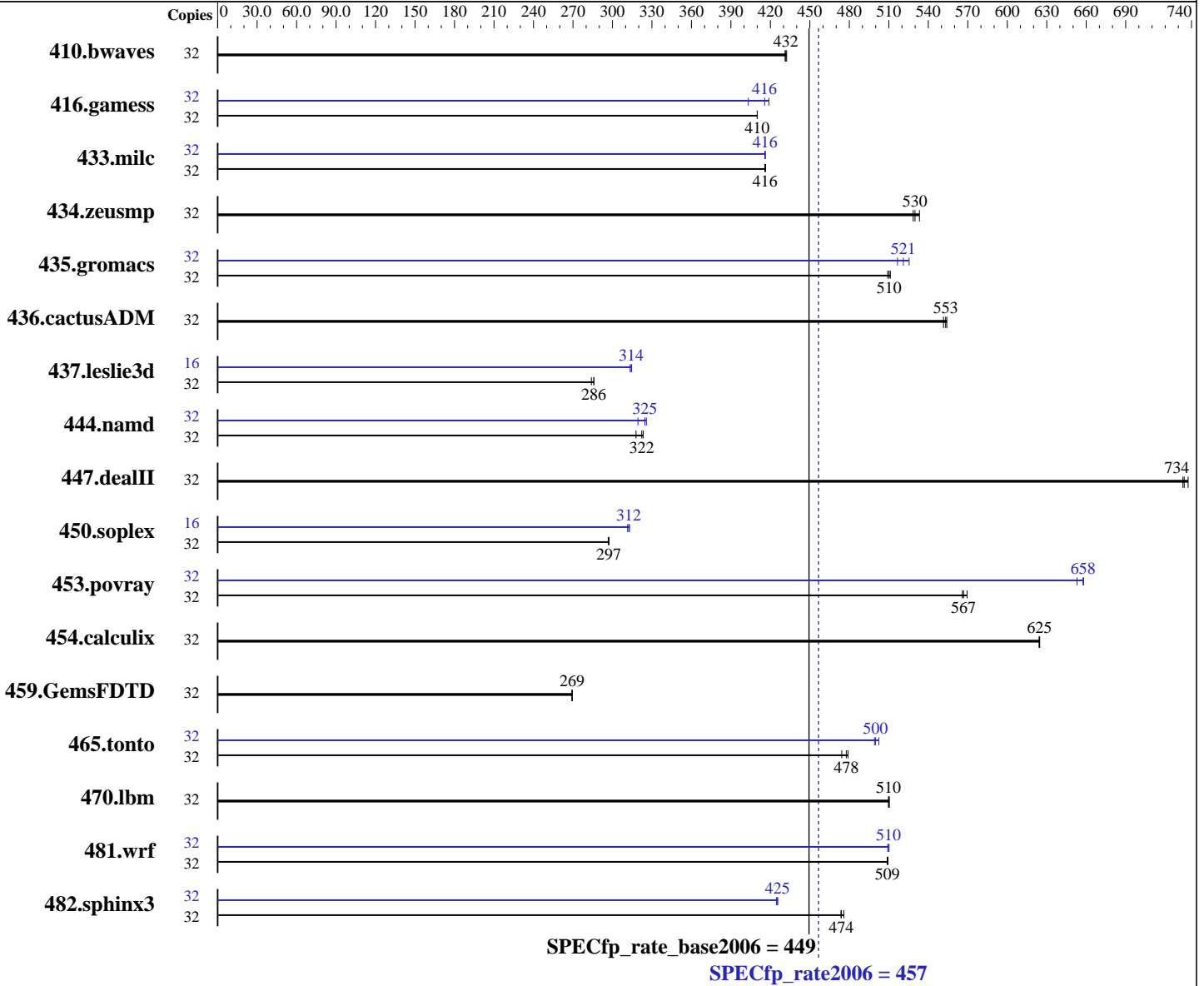
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2640 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 2000  
 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 6.4, Kernel 2.6.32-358.18.1.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 1027GR-TRFT+  
(X9DRG-HTF+, Intel Xeon E5-2640 v2)

SPECfp\_rate2006 = 457

SPECfp\_rate\_base2006 = 449

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013

L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)  
Disk Subsystem: 1 x 300 GB SATA III, 7200 RPM  
Other Hardware: None

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

## Results Table

| Benchmark     | Base   |             |            |            |            |             |            | Peak   |             |            |            |            |             |            |
|---------------|--------|-------------|------------|------------|------------|-------------|------------|--------|-------------|------------|------------|------------|-------------|------------|
|               | Copies | Seconds     | Ratio      | Seconds    | Ratio      | Seconds     | Ratio      | Copies | Seconds     | Ratio      | Seconds    | Ratio      | Seconds     | Ratio      |
| 410.bwaves    | 32     | <b>1007</b> | <b>432</b> | 1009       | 431        | 1006        | 432        | 32     | <b>1007</b> | <b>432</b> | 1009       | 431        | 1006        | 432        |
| 416.gamess    | 32     | <b>1528</b> | <b>410</b> | 1528       | 410        | 1528        | 410        | 32     | <b>1508</b> | <b>416</b> | 1496       | 419        | 1554        | 403        |
| 433.milc      | 32     | <b>706</b>  | <b>416</b> | 706        | 416        | 706         | 416        | 32     | 706         | 416        | <b>706</b> | <b>416</b> | 706         | 416        |
| 434.zeusmp    | 32     | 546         | 533        | 551        | 529        | <b>550</b>  | <b>530</b> | 32     | 546         | 533        | 551        | 529        | <b>550</b>  | <b>530</b> |
| 435.gromacs   | 32     | 447         | 511        | <b>448</b> | <b>510</b> | 449         | 509        | 32     | 435         | 525        | <b>438</b> | <b>521</b> | 442         | 517        |
| 436.cactusADM | 32     | 693         | 552        | <b>691</b> | <b>553</b> | 690         | 554        | 32     | 693         | 552        | <b>691</b> | <b>553</b> | 690         | 554        |
| 437.leslie3d  | 32     | <b>1052</b> | <b>286</b> | 1059       | 284        | 1052        | 286        | 16     | 480         | 313        | <b>479</b> | <b>314</b> | 478         | 315        |
| 444.namd      | 32     | <b>796</b>  | <b>322</b> | 794        | 323        | 807         | 318        | 32     | <b>791</b>  | <b>325</b> | 804        | 319        | 788         | 326        |
| 447.dealII    | 32     | 499         | 733        | 496        | 737        | <b>498</b>  | <b>734</b> | 32     | 499         | 733        | 496        | 737        | <b>498</b>  | <b>734</b> |
| 450.soplex    | 32     | <b>898</b>  | <b>297</b> | 899        | 297        | 898         | 297        | 16     | <b>427</b>  | <b>312</b> | 426        | 313        | 428         | 311        |
| 453.povray    | 32     | <b>300</b>  | <b>567</b> | 299        | 570        | 301         | 566        | 32     | 259         | 658        | <b>259</b> | <b>658</b> | 261         | 653        |
| 454.calculix  | 32     | 423         | 625        | <b>423</b> | <b>625</b> | 423         | 624        | 32     | 423         | 625        | <b>423</b> | <b>625</b> | 423         | 624        |
| 459.GemsFDTD  | 32     | 1261        | 269        | 1259       | 270        | <b>1260</b> | <b>269</b> | 32     | 1261        | 269        | 1259       | 270        | <b>1260</b> | <b>269</b> |
| 465.tonto     | 32     | 657         | 479        | <b>659</b> | <b>478</b> | 664         | 474        | 32     | <b>630</b>  | <b>500</b> | 627        | 502        | 631         | 499        |
| 470.lbm       | 32     | 862         | 510        | <b>862</b> | <b>510</b> | 861         | 510        | 32     | 862         | 510        | <b>862</b> | <b>510</b> | 861         | 510        |
| 481.wrf       | 32     | 703         | 509        | 702        | 509        | <b>702</b>  | <b>509</b> | 32     | <b>701</b>  | <b>510</b> | 702        | 509        | 701         | 510        |
| 482.sphinx3   | 32     | <b>1316</b> | <b>474</b> | 1311       | 476        | 1317        | 474        | 32     | 1469        | 425        | 1466       | 426        | <b>1466</b> | <b>425</b> |

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:/home/cpu2006/sh"

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 1027GR-TRFT+  
(X9DRG-HTF+, Intel Xeon E5-2640 v2)

SPECfp\_rate2006 = 457

SPECfp\_rate\_base2006 = 449

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

**Test date:** Oct-2013  
**Hardware Availability:** Sep-2013  
**Software Availability:** Sep-2013

### General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4  
Transparent Huge Pages enabled with:  
echo always > /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.lelie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.deallI: -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 1027GR-TRFT+  
(X9DRG-HTF+, Intel Xeon E5-2640 v2)

SPECfp\_rate2006 = 457

SPECfp\_rate\_base2006 = 449

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

**Test date:** Oct-2013  
**Hardware Availability:** Sep-2013  
**Software Availability:** Sep-2013

## Base Optimization Flags

### C benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias  
-opt-mem-layout-trans=3

### C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias  
-opt-mem-layout-trans=3

### Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch

### Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -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.deallI: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 1027GR-TRFT+  
(X9DRG-HTF+, Intel Xeon E5-2640 v2)

SPECfp\_rate2006 = 457

SPECfp\_rate\_base2006 = 449

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013

## Peak Portability Flags (Continued)

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

## 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) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3  
 -unroll2

### C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 1027GR-TRFT+  
(X9DRG-HTF+, Intel Xeon E5-2640 v2)

SPECfp\_rate2006 = 457

SPECfp\_rate\_base2006 = 449

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013

## Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

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) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Fri Oct 10 18:32:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 5 November 2013.