



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF , Intel Xeon E5-2697 v3)

SPECfp<sup>®</sup>2006 = **113**

SPECfp\_base2006 = **108**

CPU2006 license: 001176

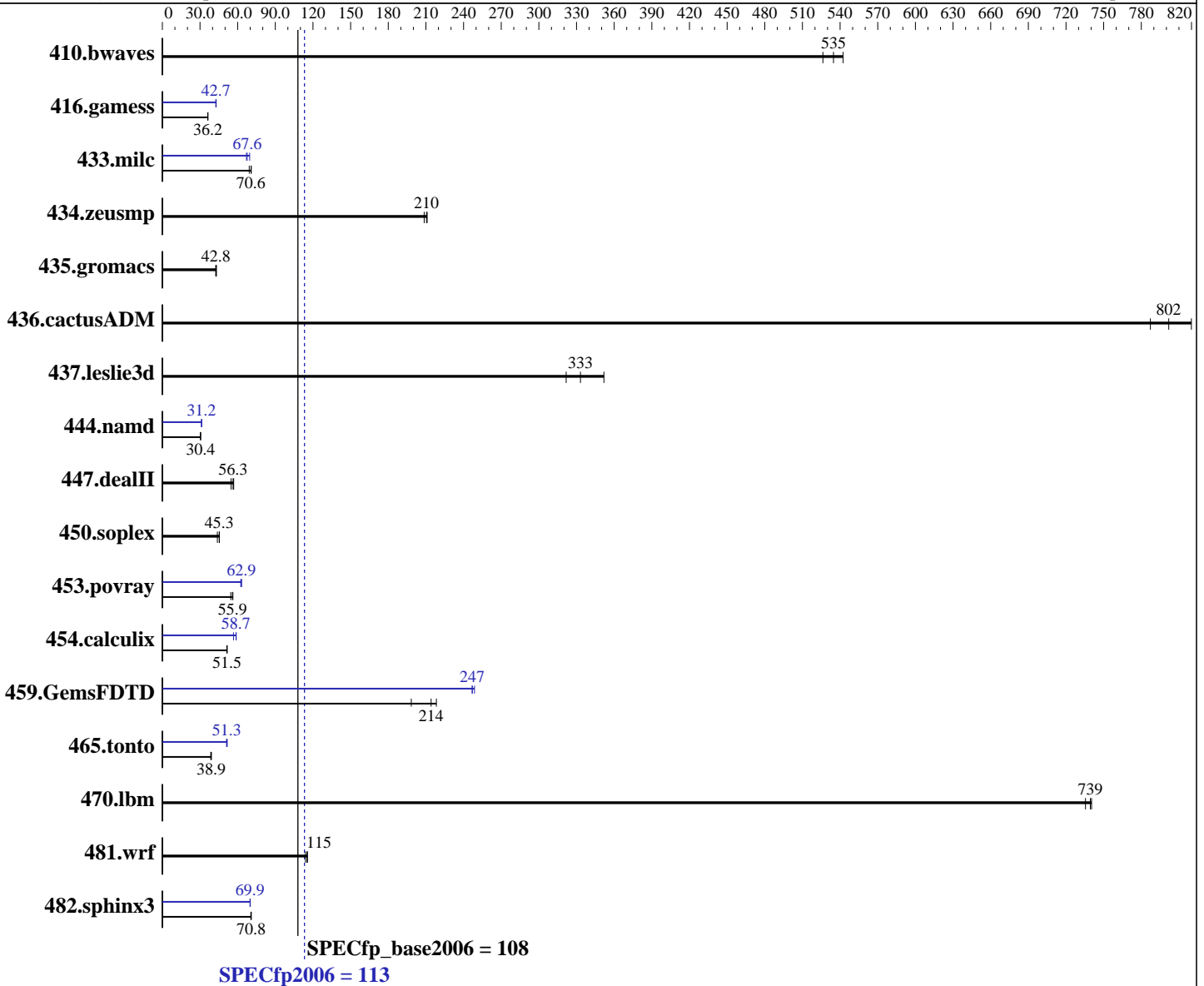
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2697 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 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: Red Hat Enterprise Linux Server release 7.0, Kernel 3.10.0-123.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;  
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF , Intel Xeon E5-2697 v3)

SPECfp2006 = 113

SPECfp\_base2006 = 108

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

L3 Cache: 35 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)  
Disk Subsystem: 1 x 450 GB SAS, 10000 RPM  
Other Hardware: None

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

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	25.8	526	<u>25.4</u>	<u>535</u>	25.1	542	25.8	526	<u>25.4</u>	<u>535</u>	25.1	542
416.gamess	540	36.3	<u>540</u>	<u>36.2</u>	541	36.2	<u>458</u>	<u>42.7</u>	459	42.6	456	42.9
433.milc	130	70.8	133	69.2	<u>130</u>	<u>70.6</u>	137	67.0	132	69.6	<u>136</u>	<u>67.6</u>
434.zeusmp	<u>43.2</u>	<u>210</u>	43.6	209	43.1	211	<u>43.2</u>	<u>210</u>	43.6	209	43.1	211
435.gromacs	168	42.5	<u>167</u>	<u>42.8</u>	166	43.1	168	42.5	<u>167</u>	<u>42.8</u>	166	43.1
436.cactusADM	14.6	820	<u>14.9</u>	<u>802</u>	15.2	787	14.6	820	<u>14.9</u>	<u>802</u>	15.2	787
437.leslie3d	<u>28.2</u>	<u>333</u>	26.7	352	29.2	322	<u>28.2</u>	<u>333</u>	26.7	352	29.2	322
444.namd	263	30.4	264	30.4	<u>264</u>	<u>30.4</u>	257	31.3	<u>257</u>	<u>31.2</u>	257	31.2
447.dealII	<u>203</u>	<u>56.3</u>	209	54.8	201	56.8	<u>203</u>	<u>56.3</u>	209	54.8	201	56.8
450.soplex	190	43.8	183	45.5	<u>184</u>	<u>45.3</u>	190	43.8	183	45.5	<u>184</u>	<u>45.3</u>
453.povray	94.7	56.2	<u>95.2</u>	<u>55.9</u>	97.6	54.5	85.2	62.5	<u>84.5</u>	<u>62.9</u>	84.3	63.1
454.calculix	<u>160</u>	<u>51.5</u>	160	51.6	161	51.3	140	58.9	<u>141</u>	<u>58.7</u>	145	56.7
459.GemsFDTD	<u>49.5</u>	<u>214</u>	48.6	218	53.5	198	43.0	247	42.7	249	<u>43.0</u>	<u>247</u>
465.tonto	255	38.6	<u>253</u>	<u>38.9</u>	252	39.0	192	51.2	<u>192</u>	<u>51.3</u>	190	51.7
470.lbm	18.6	740	<u>18.6</u>	<u>739</u>	18.7	736	18.6	740	<u>18.6</u>	<u>739</u>	18.7	736
481.wrf	<u>96.9</u>	<u>115</u>	96.6	116	98.0	114	<u>96.9</u>	<u>115</u>	96.6	116	98.0	114
482.sphinx3	276	70.5	275	70.8	<u>275</u>	<u>70.8</u>	<u>279</u>	<u>69.9</u>	279	69.9	278	70.0

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"

## Platform Notes

BIOS Settings:  
Hyper-Threading (All) = Disabled  
Early Snoop = Disabled  
Enforce POR = Disabled  
COD Enabled = Disabled  
Sysinfo program /home/SPEC2K6/SPEC2006-V12/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on 21-172.hnet Wed Jan 14 23:05:12 2015

This section contains SUT (System Under Test) info as seen by  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF, Intel Xeon E5-2697 v3)

SPECfp2006 = 113

SPECfp\_base2006 = 108

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

Test date: Jan-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

### Platform Notes (Continued)

some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```
From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2697 v3 @ 2.60GHz
 2 "physical id"s (chips)
 28 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
cpu cores : 14
siblings : 14
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size : 35840 KB
```

```
From /proc/meminfo
MemTotal: 131755912 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

```
uname -a:
Linux 21-172.hnet 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 5 Jan 14 17:44

```
SPEC is set to: /home/SPEC2K6/SPEC2006-V12
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel_21--172-home xfs 364G 8.8G 355G 3% /home
Additional information from dmidecode:
```

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. 1.0a 12/17/2014  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF , Intel Xeon E5-2697 v3)

SPECfp2006 = 113

SPECfp\_base2006 = 108

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

Test date: Jan-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

### Platform Notes (Continued)

Memory:

4x Samsung (date:14/13) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz  
4x Samsung (date:14/17) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

### General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact,0,1"  
LD\_LIBRARY\_PATH = "/home/SPEC2K6/SPEC2006-V12/libs/32:/home/SPEC2K6/SPEC2006-V12/libs/64:/home/SPEC2K6/SPEC2006-V12/sh"  
OMP\_NUM\_THREADS = "28"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled

### 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF , Intel Xeon E5-2697 v3)

SPECfp2006 = 113

SPECfp\_base2006 = 108

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

Test date: Jan-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

## Base Portability Flags (Continued)

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:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-ansi-alias

## 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



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF , Intel Xeon E5-2697 v3)

SPECfp2006 = 113

SPECfp\_base2006 = 108

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

## Peak Optimization Flags

### C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

### C++ benchmarks:

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: basepeak = yes

416.gamess: -xCORE-AVX2(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: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(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: -xCORE-AVX2(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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 2028TR-H72FR  
(X10DRT-HIBF , Intel Xeon E5-2697 v3)

**SPECfp2006 = 113**

**SPECfp\_base2006 = 108**

**CPU2006 license:** 001176

**Test sponsor:** Supermicro

**Tested by:** Supermicro

**Test date:** Jan-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

## Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.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 Tue Feb 10 18:30:20 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 10 February 2015.