SPEC® CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

$SPECfp®_rate2006 = $ 928

$SPECfp_rate_base2006 = $ 900
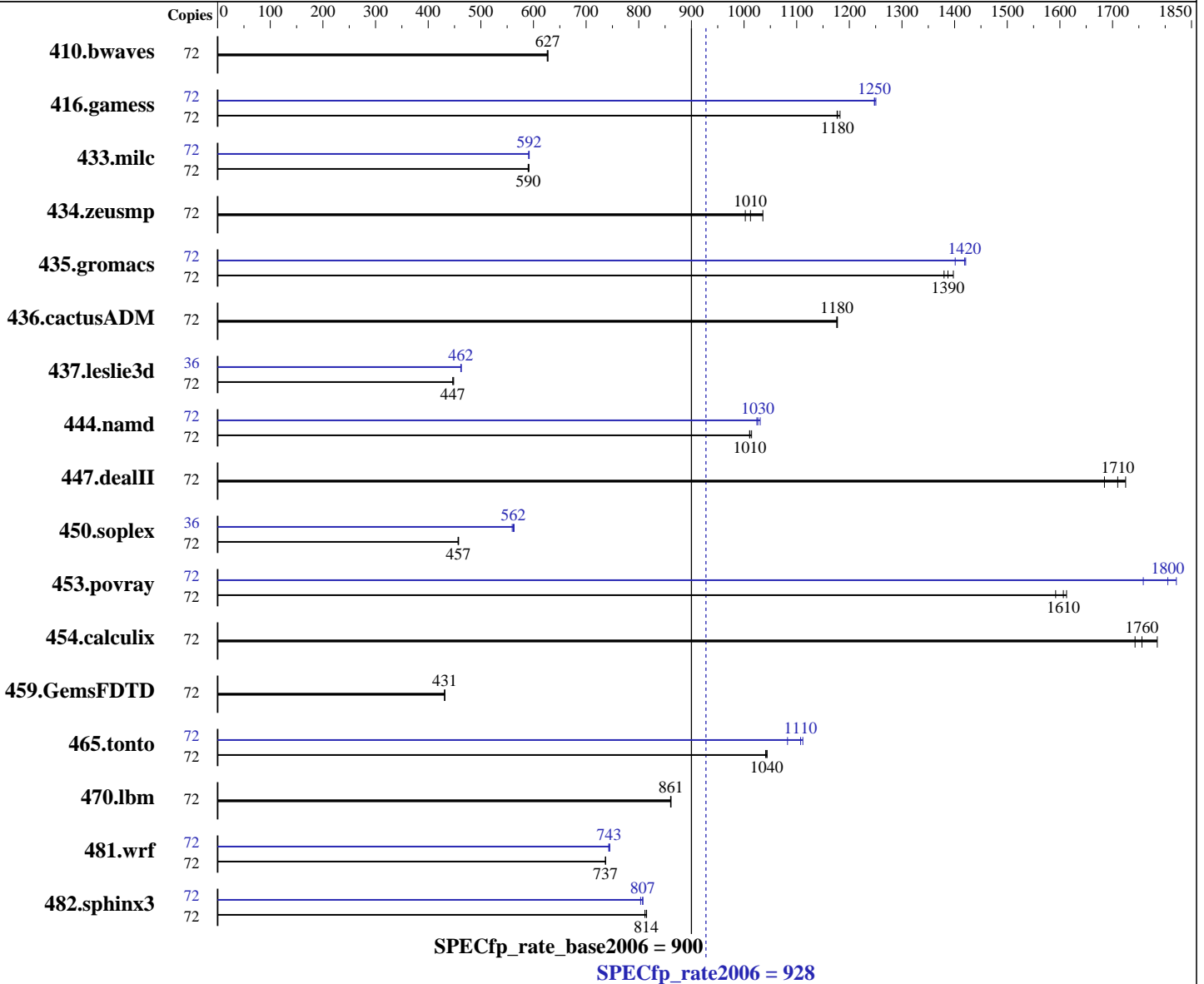
CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

Benchmark	Copies	Rate
410.bwaves	72	627
416.gamess	72 / 72	1250 / 1180
433.milc	72 / 72	592 / 590
434.zeusmp	72	1010
435.gromacs	72 / 72	1420 / 1390
436.cactusADM	72	1180
437.leslie3d	36 / 72	462 / 447
444.namd	72 / 72	1030 / 1010
447.dealII	72	1710
450.soplex	36 / 72	562 / 457
453.povray	72 / 72	1800 / 1610
454.calculix	72	1760
459.GemsFDTD	72	431
465.tonto	72 / 72	1110 / 1040
470.lbm	72	861
481.wrf	72 / 72	743 / 737
482.sphinx3	72 / 72	807 / 814

SPECfp_rate_base2006 = 900

SPECfp_rate2006 = 928

Hardware

CPU Name: Intel Xeon E5-2699 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 36 cores, 2 chips, 18 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

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: No
File System: ext4
System State: Run level 3 (multi-user)

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

SPECfp_rate2006 = 928

SPECfp_rate_base2006 = 900

CPU2006 license: 001176	**Test date:** Apr-2015
Test sponsor: Supermicro	**Hardware Availability:** Sep-2014
Tested by: Supermicro	**Software Availability:** Sep-2014

L3 Cache:	45 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)	Other Software:	None
Disk Subsystem:	1 x 500 GB SATA III, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	72	1563	626	1560	627	**1560**	**627**	72	1563	626	1560	627	**1560**	**627**
416.gamess	72	**1197**	**1180**	1198	1180	1192	1180	72	**1130**	**1250**	1130	1250	1127	1250
433.milc	72	1120	590	**1120**	**590**	1117	592	72	1117	592	1119	591	**1117**	**592**
434.zeusmp	72	654	1000	**647**	**1010**	633	1040	72	654	1000	**647**	**1010**	633	1040
435.gromacs	72	368	1400	**371**	**1390**	373	1380	72	362	1420	367	1400	**362**	**1420**
436.cactusADM	72	**731**	**1180**	731	1180	732	1180	72	**731**	**1180**	731	1180	732	1180
437.leslie3d	72	1515	447	1509	448	**1514**	**447**	36	**732**	**462**	733	462	731	463
444.namd	72	571	1010	**571**	**1010**	569	1010	72	**563**	**1030**	564	1020	560	1030
447.dealII	72	478	1720	489	1680	**482**	**1710**	72	478	1720	489	1680	**482**	**1710**
450.soplex	72	1312	458	**1313**	**457**	1315	457	36	537	560	533	563	**535**	**562**
453.povray	72	**238**	**1610**	241	1590	238	1610	72	**212**	**1800**	218	1760	210	1820
454.calculix	72	341	1740	333	1780	**338**	**1760**	72	341	1740	333	1780	**338**	**1760**
459.GemsFDTD	72	**1771**	**431**	1772	431	1770	432	72	**1771**	**431**	1772	431	1770	432
465.tonto	72	**679**	**1040**	679	1040	681	1040	72	637	1110	**640**	**1110**	654	1080
470.lbm	72	**1149**	**861**	1150	860	1149	861	72	**1149**	**861**	1150	860	1149	861
481.wrf	72	**1091**	**737**	1091	737	1092	737	72	1082	743	**1082**	**743**	1080	745
482.sphinx3	72	1729	812	**1723**	**814**	1722	815	72	1737	808	1746	804	**1738**	**807**

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"

Platform Notes

BIOS Settings:
COD Enable = Enabled
Early Snoop = Disabled

Continued on next page

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

SPECfp_rate2006 =   928

SPECfp_rate_base2006 =   900

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

Platform Notes (Continued)

```
Enforce POR = Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on 200-85.hnet Sat Apr 18 13:40:27 2015

This section contains SUT (System Under Test) info as seen by
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 E5-2699 v3 @ 2.30GHz
      2 "physical id"s (chips)
      72 "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 : 9
      siblings  : 18
      physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
   cache size : 23040 KB

From /proc/meminfo
   MemTotal:       263862264 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 200-85.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 3 Apr 18 13:39

SPEC is set to: /home/cpu2006
   Filesystem                      Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel_200--85-home ext4  405G   65G  320G  17% /home
Additional information from dmidecode:
```

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

$SPECfp_rate2006 = $ 928

$SPECfp_rate_base2006 = $ 900

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

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

Platform Notes (Continued)

```
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. 1.0b 01/29/2015
Memory:
 8x NO DIMM NO DIMM
 1x Samsung (date:13/5p) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
 15x Samsung (date:14/13) 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:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

 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
 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

Continued on next page

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

$SPECfp_rate2006 = $ 928

$SPECfp_rate_base2006 = $ 900

CPU2006 license: 001176		**Test date:**	Apr-2015
Test sponsor:	Supermicro	**Hardware Availability:**	Sep-2014
Tested by:	Supermicro	**Software Availability:**	Sep-2014

Base Portability Flags (Continued)

```
    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:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

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

Benchmarks using both Fortran and C:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

Peak Compiler Invocation

C benchmarks:
```
    icc   -m64
```

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

    450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

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

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

SPECfp_rate2006 =   928

SPECfp_rate_base2006 =   900

CPU2006 license: 001176		**Test date:**	Apr-2015
Test sponsor:	Supermicro	**Hardware Availability:**	Sep-2014
Tested by:	Supermicro	**Software Availability:**	Sep-2014

Peak Compiler Invocation (Continued)

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
    482.sphinx3: -DSPEC_CPU_LP64
```

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

       470.lbm: basepeak = yes

    482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
              -unroll2
```

C++ benchmarks:

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

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

SPECfp_rate2006 = 928

SPECfp_rate_base2006 = 900

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

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

Peak Optimization Flags (Continued)

  450.soplex: -xCORE-AVX2(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: -xCORE-AVX2(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: -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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

  459.GemsFDTD: basepeak = yes

    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) -unroll4
               -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

  435.gromacs: -xCORE-AVX2(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: -xCORE-AVX2 -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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.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-revH.xml

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Supermicro

SuperServer 2028R-C1R4+
(X10DRC-LN4+ , Intel Xeon E5-2699 v3)

$SPECfp\_rate2006 =$ 928

$SPECfp\_rate\_base2006 =$ 900

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

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

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.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue May 5 15:16:14 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 May 2015.