### Supermicro

SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)

<table>
<thead>
<tr>
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<th>Supermicro</th>
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<table>
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<tr>
<th>SPEC® CFP2006 Result</th>
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</table>

**SPECfp® rate** = 446

**SPECfp_rate_base** = 431

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Operating System:</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Red Hat Enterprise Linux Server release 6.1 (Santiago) 2.6.32-131.0.15.el6.x86_64</td>
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<tr>
<td>CPU MHz:</td>
<td>Compiler:</td>
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<tr>
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<td>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</td>
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<tr>
<td>CPU(s) enabled:</td>
<td>Auto Parallel:</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
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</tr>
<tr>
<td>Primary Cache:</td>
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<td>Secondary Cache:</td>
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**CPU2006 license:** 001176  **Test date:** Apr-2012

**Test sponsor:** Supermicro  **Hardware Availability:** Mar-2012

**Tested by:** Supermicro  **Software Availability:** Oct-2011

---

### Copies

| Copy | 30.0 | 60.0 | 90.0 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 | 390 | 420 | 450 | 480 | 510 | 540 | 570 | 600 | 630 | 660 | 690 | 720 | 750 | 810 |
|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 16   | 468  | 468  | 468  | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 |
| 32   | 468  | 468  | 468  | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 | 468 |

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**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

---

### Hardware Details

**CPU Name:** Intel Xeon E5-2660

**CPU Characteristics:** Intel Turbo Boost Technology up to 3.00 GHz

**CPU MHz:** 2200

**FPU:** Integrated

**CPU(s) enabled:** 16 cores, 2 chips, 8 cores/chip, 2 threads/core

**CPU(s) orderable:** 1,2 chip

**Primary Cache:** 32 KB I + 32 KB D on chip per core

**Secondary Cache:** 256 KB I+D on chip per core

---

**Test date:** Apr-2012

**Hardware Availability:** Mar-2012

**Software Availability:** Oct-2011

---

**Tested by:** Supermicro
## SPEC CFP2006 Result

### Supermicro

SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)

**SPECfp_rate2006** = 446  
**SPECfp_rate_base2006** = 431

---

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

| L3 Cache: | 20 MB I+D on chip per chip  
| Other Cache: | None  
| Memory: | 64 GB (8 x 8 GB 2Rx8 PC3-12800R-11, ECC, operate @ 1600MHz)  
| Disk Subsystem: | 1 x 1 TB SATA II, 7200 RPM  
| Other Hardware: | None

**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32/64-bit  
**Peak Pointers:** 32/64-bit  
**Other Software:** None

**Test date:** Apr-2012  
**Hardware Availability:** Mar-2012  
**Software Availability:** Oct-2011

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### Results Table

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</tbody>
</table>

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

Sysinfo program /home/cpu2006/config/sysinfo.rev6800  
$Rev: 6800 $ $Date:: 2011-10-11 $$ 6f2ebdff5032aa4e583f96b07f99d3  
running on localhost.localdomain Fri Apr 13 22:12:26 2012

Continued on next page
SPEC CFP2006 Result

Supermicro
SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)

SPECfp_rate2006 = 446
SPECfp_rate_base2006 = 431

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

Platform Notes (Continued)

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 E5-2660 0 @ 2.20GHz
  2 "physical id"s (chips)
  32 "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 : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

From /proc/meminfo
MemTotal: 65948756 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.1 (Santiago)

From /etc/*release*/etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10 15:42:40 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 13 09:03

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/devmapper/VolGroup-1v_home ext4 162G 86G 68G 56% /home

Additional information from dmidecode:
Memory:
8x Hynix Semiconductor HMT31GR7CFR4C 8 GB 1600 MHz 1 rank

(End of data from sysinfo program)
**SPEC CFP2006 Result**

**Supermicro**
SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)  

**SPECfp_rate2006 = 446**  
**SPECfp_rate_base2006 = 431**

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<td>Software Availability: Oct-2011</td>
</tr>
</tbody>
</table>

**General Notes**

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "~/home/cpu2006/1ibs/32:/home/cpu2006/1ibs/64"

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.:
umactl --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.mlmc: -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**

Supermicro

SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)

<table>
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**SPECfp_rate2006 = 446**

**SPECfp_rate_base2006 = 431**

- **Test date**: Apr-2012
- **Hardware Availability**: Mar-2012
- **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
- -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.zesusmp: **-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**

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Supermicro
SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)

SPEC CFP2006 Result

SPECfp_rate2006 = 446
SPECfp_rate_base2006 = 431

CPU2006 license: 001176
Test sponsor: Supermicro
Test date: Apr-2012
Tested by: Supermicro
Hardware Availability: Mar-2012
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

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**SPEC CFP2006 Result**

**Supermicro**

SuperServer 1027GR-TSF (X9DRG-HF, Intel Xeon E5-2660, 3.0GHz)

| SPECfp_rate2006 | 446 |
| SPECfp_rate_base2006 | 431 |

**CPU2006 license:** 001176  
**Test date:** Apr-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

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

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

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