## SPEC® CFP2006 Result

Supermicro
Supermicro X11SAT-F motherboard  
(X11SAT-F, Intel Pentium G4400)

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td><strong>Operating System:</strong> Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86_64</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td><strong>Compiler:</strong> C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td><strong>CPU MHz:</strong> 3300</td>
<td><strong>Auto Parallel:</strong> Yes</td>
</tr>
<tr>
<td><strong>FPU:</strong> Integrated</td>
<td><strong>File System:</strong> xfs</td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong> 2 cores, 1 chip, 2 cores/chip</td>
<td><strong>System State:</strong> Run level 3 (multi-user)</td>
</tr>
<tr>
<td><strong>CPU(s) orderable:</strong> 1 chip</td>
<td><strong>Primary Cache:</strong> 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Primary Cache:</strong> 32 KB I + 32 KB D on chip per core</td>
<td><strong>Secondary Cache:</strong> 256 KB I+D on chip per core</td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong> 256 KB I+D on chip per core</td>
<td><strong>Continued on next page</strong></td>
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</table>
### SPEC CFP2006 Result

Supermicro
Supermicro X11SAT-F motherboard (X11SAT-F, Intel Pentium G4400)

**SPECfp2006** = 70.9

**SPECfp_base2006** = 70.4

---

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

<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>3 MB I+D on chip per chip</th>
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<tbody>
<tr>
<td>Other Cache:</td>
<td>None</td>
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<tr>
<td>Memory:</td>
<td>16 GB (4 x 4 GB 1Rx8 PC4-2133P-U)</td>
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<tr>
<td>Disk Subsystem:</td>
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<tr>
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<tr>
<th>Base Pointers:</th>
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<td>Peak Pointers:</td>
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<td>Other Software:</td>
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**Test date:** Jan-2016
**Hardware Availability:** Sep-2015
**Software Availability:** Sep-2015

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### Results Table

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<th>Ratio</th>
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<th>Ratio</th>
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<td>416.gamess</td>
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<td>465.tonto</td>
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<td>63.0</td>
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<td>62.7</td>
<td>312</td>
<td>62.6</td>
<td>310</td>
<td>63.0</td>
</tr>
</tbody>
</table>

**Operating System Notes**

Stack size set to unlimited using "ulimit -s unlimited"

**Platform Notes**

As tested, the system used a Supermicro CSE-732D4-903B chassis.
The chassis is configured with a PWS-903-FQ power supply, 1 SNK-P0046A4 heatsink, as well as 1 FAN-0124L4 chassis fan.
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 ## e3fbb8667b5a285932ceab81e28219e1
running on X11SAT-01 Sat Jan 23 07:41:08 2016

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

Continued on next page
### SPEC CFP2006 Result

**Supermicro**

Supermicro X11SAT-F motherboard  
(X11SAT-F, Intel Pentium G4400)

<table>
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</tr>
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<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>70.4</td>
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<tr>
<th>CPU2006 license</th>
<th>001176</th>
</tr>
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<td>Test sponsor</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Tested by</td>
<td>Supermicro</td>
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<th>Jan-2016</th>
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<td>Hardware Availability</td>
<td>Sep-2015</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Sep-2015</td>
</tr>
</tbody>
</table>

#### Platform Notes (Continued)

From /proc/cpuinfo

```plaintext
model name : Intel(R) Pentium(R) CPU G4400 @ 3.30GHz
  1 "physical id"s (chips)
  2 "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 : 2
  siblings : 2
  physical 0: cores 0 1
  cache size : 3072 KB
```

From /proc/meminfo

```
MemTotal:       16248992 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

From /etc/*release* /etc/*version*

```
NAME="Red Hat Enterprise Linux Server"
VERSION="7.1 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.1"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
```

```
uname -a:
Linux X11SAT-01 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38 EST 2015
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jan 23 02:12
```

```
SPEC is set to: /usr/cpu2006
```

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 46G 137G 26% /
```

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. 1.0 01/19/2016
Memory:
4x Micron 8ATF51264AZ-2G1A2 4 GB 1 rank 2133 MHz

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Supermicro

Supermicro X11SAT-F motherboard
(X11SAT-F, Intel Pentium G4400)

**SPECfp2006** = 70.9
**SPECfp_base2006** = 70.4

**CPU2006 license:** 001176
**Test date:** Jan-2016
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**Tested by:** Supermicro
**Software Availability:** Sep-2015

### Platform Notes (Continued)

(End of data from sysinfo program)

### General Notes

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

- `KMP_AFFINITY = "granularity=fine,compact,1,0"
- `LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
- `OMP_NUM_THREADS = "2"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
```
echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

### Base Compiler Invocation

C benchmarks:

```bash
icc   -m64
```

C++ benchmarks:

```bash
icpc  -m64
```

Fortran benchmarks:

```bash
ifort -m64
```

Benchmarks using both Fortran and C:

```bash
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.leshe3d`: `--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`

Continued on next page
Supermicro
Supermicro X11SAT-F motherboard
(X11SAT-F , Intel Pentium G4400)

SPECfp2006 = 70.9
SPECfp_base2006 = 70.4

CPU2006 license: 001176
Test date: Jan-2016
Test sponsor: Supermicro
Hardware Availability: Sep-2015
Tested by: Supermicro
Software Availability: Sep-2015

Base Portability Flags (Continued)
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags
C benchmarks: 
- xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
C++ benchmarks: 
- xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
Fortran benchmarks: 
- xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
Benchmarks using both Fortran and C: 
- xSSE4.2 -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

Peak Optimization Flags
C benchmarks: 
433.milc: basepeak = yes
470.lbm: basepeak = yes
Supermicro
Supermicro X11SAT-F motherboard (X11SAT-F, Intel Pentium G4400)

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

SPECfp2006 = 70.9
SPECfp_base2006 = 70.4

Peak Optimization Flags (Continued)

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes
450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -unroll14 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -unroll12 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -unroll12 -inline-level=0 -opt-prefetch
-parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -inline-calloc -opt-malloc-options=3
-auto -unroll14

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -03 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes
<table>
<thead>
<tr>
<th>Supermicro</th>
<th>SPECfp2006 =</th>
<th>70.9</th>
</tr>
</thead>
<tbody>
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The flags files that were used to format this result can be browsed at:

http://www.spec.org/cpu2006/flags/Intel-ic16.0-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-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.xml

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For questions about this result, please contact the tester.

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

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