Supermicro
SuperServer 5029S-TN2
(X11SSV-Q, Intel Pentium G4400)

SPECfp®2006 = 71.8
SPECfp_base2006 = 71.3

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

410.bwaves
416.gamess
433.milc
434.zeusmp
435.gromacs
436.cactusADM
437.leslie3d
444.namd
447.dealII
450.soplex
453.povray
454.calculix
459.GemsFDTD
465.tonto
470.lbm
481.wrf
482.sphinx3

SPECfp_base2006 = 71.3

SPECfp2006 = 71.8

Hardware
CPU Name: Intel Pentium G4400
CPU Characteristics:
CPU MHz: 3300
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
CPU(s) orderable: 1 chip
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 7.1,
Kernel 3.10.0-229.el7.x86_64
Compiler: 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
Auto Parallel: Yes
File System: xfs
System State: Run level 3 (multi-user)

Continued on next page
SPEC CFP2006 Result

Supermicro
SuperServer 5029S-TN2 (X11SSV-Q , Intel Pentium G4400)

SPECfp2006 = 71.8
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CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro
L3 Cache: 3 MB I+D on chip per chip
Memory: 16 GB (2 x 8 GB 2Rx8 PC4-2133P-U)
Disk Subsystem: 1 x 750 GB SATA III, 7200 RPM
Other Cache: None
Other Hardware: None
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

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<th>Seconds</th>
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<th>Seconds</th>
<th>Ratio</th>
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<td>305</td>
<td>64.0</td>
</tr>
</tbody>
</table>

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

Sysinfo program /home/cpu2006_ic16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Fri Dec 18 01:38:59 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) Pentium(R) CPU G4400 @ 3.30GHz
Continued on next page
Supermicro
SuperServer 5029S-TN2
(X11SSV-Q, Intel Pentium G4400)

SPECfp2006 = 71.8
SPECfp_base2006 = 71.3

CPU2006 license: 001176
Test date: Dec-2015
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Tested by: Supermicro
Software Availability: Sep-2015

Platform Notes (Continued)

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
cautions.)
cpu cores : 2
siblings : 2
physical 0: cores 0 1
cache size : 3072 KB

From /proc/meminfo
MemTotal: 16164312 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
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 localhost.localdomain 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 Dec 17 20:35

SPEC is set to: /home/cpu2006_ic16
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 216G 181G 36G 84% /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 11/03/2015
Memory:
2x Samsung M471A1G43DB0-CPB 8 GB 2 rank 2133 MHz

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

**Supermicro**
SuperServer 5029S-TN2 (X11SSV-Q, Intel Pentium G4400)

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

**General Notes**

Environment variables set by runspec before the start of the run:
- KMP_AFFINITY = "granularity=fine,compact,1,0"
- LD_LIBRARY_PATH = "/home/cpu2006_ic16/libs/32:/home/cpu2006_ic16/libs/64:/home/cpu2006_ic16/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:**
- `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`
- 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`
Supermicro
SuperServer 5029S-TN2
(X11SSV-Q , Intel Pentium G4400)

SPECfp2006 = 71.8
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CPU2006 license: 001176
Test date: Dec-2015

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Software Availability: Sep-2015

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
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
Continued on next page
**Supermicro**  
SuperServer 5029S-TN2  
(X11SSV-Q , Intel Pentium G4400)  

**SPEC CFP2006 Result**  

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**Hardware Availability:** Sep-2015  
**Tested by:** Supermicro  
**Software Availability:** Sep-2015  

**Peak Optimization Flags (Continued)**

```plaintext
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) -unroll4 -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) -unroll2 -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) -unroll2 -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 -unroll4

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
```

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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Test date: Dec-2015
Hardware Availability: Sep-2015
Software Availability: Sep-2015

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

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