## Supermicro

SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2650L)

<table>
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<tr>
<th>Software</th>
<th>CPU2006 license: 001176</th>
<th>Test sponsor: Supermicro</th>
<th>Tested by: Supermicro</th>
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<td>CPU2006 Results</td>
<td>SPECfp_rate2006 = 378</td>
<td>SPECfp_rate_base2006 = 371</td>
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</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon E5-2650L
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.30 GHz
- **CPU MHz:** 1800
- **FPU:** Integrated
- **CPU(s) enabled:** 16 cores, 2 chips, 8 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 6.2, Kernel 2.6.32-220.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
- **System State:** Run level 3 (multi-user)
Supermicro
SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2650L)

SPEC CFP2006 Result
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Supermicro

SPECfp_rate2006 = 378
SPECfp_rate_base2006 = 371

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

L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 1 TB SATA II, 7200 RPM
Other Hardware: None

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

Results Table

<table>
<thead>
<tr>
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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"

General Notes
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Supermicro
SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2650L)

SPECfp_rate2006 = 378
SPECfp_rate_base2006 = 371

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

General Notes (Continued)
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.:
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
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
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Base Optimization Flags

C benchmarks:
-xAVX -ipo -03 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xAVX -ipo -03 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xAVX -ipo -03 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -03 -no-prec-div -static -opt-prefetch -auto-p32
-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.reussmp: -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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**SPEC CFP2006 Result**

**Supermicro**
SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2650L)

| SPECfp_rate2006 | = 378 |
| SPECfp_rate_base2006 | = 371 |

**CPU2006 license:** 001176
**Test date:** May-2012
**Test sponsor:** Supermicro
**Hardware Availability:** Mar-2012
**Tested by:** Supermicro
**Software Availability:** Dec-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)
-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)
-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)
-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)
-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)
-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xAVX (pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-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)
-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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SPECfp_rate_base2006 = 371

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</tbody>
</table>

**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:

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