Fujitsu
CELSIUS M470, Intel Xeon W3520

<table>
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<tr>
<th>SPECfp®2006 = 33.8</th>
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<tr>
<td>482.sphinx3</td>
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</table>

Hardware
CPU Name: Intel Xeon W3520
CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz: 2667
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 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: SuSe Linux Enterprise Server 10 (x86_64)
Compiler: Intel C++ and Fortran Compiler 11.0 for Linux
Build 20090131 Package ID: l_cproc_p_11.0.080,
  l_cprof_p_11.0.080
Auto Parallel: Yes
File System: ext3
System State: Multi-User Run Level 3
Base Pointers: 64-bit
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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 12 GB (6x2 GB PC3 8500E, 2 rank, CL7-7-7, ECC)
Disk Subsystem: 1 x SATA II, 400 GB, 7200 rpm
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.200802

Operating System Notes
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes
BIOS configuration:
Hyper-Threading Technology = Disabled
Memory speed set to "Max Performance" (Switch in "Advanced Memory Options")

General Notes
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
SPEC CFP2006 Result

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General Notes (Continued)

For information about Fujitsu please visit:
http://www.fujitsu.com

Base Compiler Invocation

C benchmarks:
  icc
C++ benchmarks:
  icpc
Fortran benchmarks:
  ifort
Benchmarks using both Fortran and C:
  icc ifort

Base Portability Flags

410.hwaves: -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 -nofor_main
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:
  -xsSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
C++ benchmarks:
  -xsSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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Base Optimization Flags (Continued)

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):
icpc

450.soplex: icpc -m32

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
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481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
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Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -fno-alias

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll12

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -unroll2 -ansi-alias -scalar-rep -opt-prefetch

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
   -parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -unroll4 -auto

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-Opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-Opt-prefetch -prof-use(pass 2)
-unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel -auto-ilp32

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.07.xml

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

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