IBM Corporation

IBM System x3100 M4 (Intel Xeon E3-1260L)

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

CPU Name: Intel Xeon E3-1260L
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
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

Operating System: Red Hat Enterprise Linux Server Release 6.1, Kernel 2.6.32-131.0.15.el6.x86_64
Compiler: C/C++/Fortran: Version 12.1.0.225 of Intel Compiler XE Build 20110803
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit

SPECfp®_rate2006 = 103
SPECfp_rate_base2006 = 100

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<th>Benchmark</th>
<th>Copies</th>
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Hardware Availability: Oct-2011
Software Availability: Aug-2011

Test date: Oct-2011
Tested by: IBM Corporation
Hardware Availability: Oct-2011
Software Availability: Aug-2011

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IBM Corporation

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
Other Hardware: None

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

Results Table

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</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
taskset was used to bind copies to the cores

Platform Notes

BIOS Settings:
Turbo Mode enabled in BIOS
C-State mode enabled in BIOS
SPEC CFP2006 Result

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SPECfp_rate2006 = 103
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General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/SPECcpu12.1/smartheap:/root/SPECcpu12.1/ic12.1-libs/ia32:/root/SPECcpu12.1/ic12.1-libs/intel64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5 with binutils-2.17.50.0.6-14.el5
Stack size set to unlimited using "ulimit -s unlimited"
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
runcpec 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 -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 -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.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
453.povray: -DSPEC_CPU_LP64

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IBM System x3100 M4 (Intel Xeon E3-1260L) SPECfp_rate2006 = 103
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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) -opt-mem-layout-trans=3(pass 2)
        -prof-use(pass 2) -static -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
        -unroll2

C++ benchmarks:
444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
        -no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(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

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**Peak Optimization Flags (Continued)**

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

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)  \-opt-mem-layout-trans=3(pass 2)  
\-prof-use(pass 2)  \-opt-prefetch \-static \-auto-ilp32

436.cactusADM: basepeak = yes
454.calculix: 
-xAVX \-ipo \-O3 \-no-prec-div \-static \-auto-ilp32
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-linux64.html
http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revB.20111206.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml
http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revB.20111206.xml

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For questions about this result, please contact the tester. For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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