**IBM Corporation**

**IBM System x3650 M4 (Intel Xeon E5-2643)**

**SPEC CFP2006 Result**

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</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"
Zone reclaim mode enabled with:
```
echo 1 > /proc/sys/vm/zone_reclaim_mode
```

**Platform Notes**

BIOS Settings:
Operating Mode set to Maximum Performance
Sysinfo program /root/SPECcpu-v1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on x3650M4 Wed May  9 16:58:54 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Continued on next page
IBM Corporation

IBM System x3650 M4 (Intel Xeon E5-2643)

SPECfp2006 = 82.2
SPECfp_base2006 = 79.5

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

Test date: May-2012
Hardware Availability: Mar-2012
Software Availability: Oct-2011

Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2643 0 @ 3.30GHz
  2 "physical id"s (chips)
  16 "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 : 4
siblings : 8
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB

From /proc/meminfo
MemTotal: 132115144 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.1 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)

uname -a:
Linux x3650M4 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10 15:42:40 EDT 2011
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 7 15:49

SPEC is set to: /root/SPECcpu-v1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/vg_x3650m4-lv_root ext4 790G 56G 695G 8% /

Additional information from dmidecode:
Memory:
  16x Samsung M393B1K70DH0-CK0 8 GB 1600 MHz 2 rank

(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 = "/root/SPECcpu-v1.2/libs/32:/root/SPECcpu-v1.2/libs/64"
OMP_NUM_THREADS = "8"

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IBM Corporation

IBM System x3650 M4 (Intel Xeon E5-2643)

SPEC CFP2006 Result

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General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_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

Base Optimization Flags

C benchmarks:
   -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
   -ansi-alias

Continued on next page
SPEC CFP2006 Result

IBM Corporation
IBM System x3650 M4 (Intel Xeon E5-2643)

SPECfp2006 = 82.2
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CPU2006 license: 11
Test date: May-2012
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Base Optimization Flags (Continued)

- C++ benchmarks:
  -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
- Fortran benchmarks:
  -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
- Benchmarks using both Fortran and C:
  -xAVX -ipo -O3 -no-prec-div -static -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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
  -ansi-alias
  470.lbm: basepeak = yes
  482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
  -parallel
- C++ benchmarks:

Continued on next page
SPEC CFP2006 Result

IBM Corporation

IBM System x3650 M4 (Intel Xeon E5-2643)

| SPECfp2006 = 82.2 |
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CPU2006 license: 11
Test sponsor: IBM Corporation
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Peak Optimization Flags (Continued)

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-integer-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-integer-div(pass 2) -prof-use(pass 2) -unroll14 -ansi-alias

Fortran benchmarks:

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

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-integer-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-integer-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-integer-div(pass 2) -prof-use(pass 2) -inline-calloc
-parallel -opt-malloc-options=3 -auto -unroll14

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-C.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-C.xml
### SPEC CFP2006 Result

**IBM Corporation**

IBM System x3650 M4 (Intel Xeon E5-2643)

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

**Test date:** May-2012
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For other inquiries, please contact webmaster@spec.org.

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