IBM Corporation
IBM System x3300 M4
(Intel Xeon E5-2430L, 2.00 GHz)

**SPECfp®2006 = 60.7**

**SPECfp_base2006 = 57.8**

### Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2430L</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.50 GHz</td>
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<tr>
<td>CPU MHz:</td>
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<tr>
<td>FPU:</td>
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<tr>
<td>CPU(s) enabled:</td>
<td>12 cores, 2 chips, 6 cores/chip, 2 threads/core</td>
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<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chips</td>
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<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
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<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
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</table>

### Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Operating System:</td>
<td>Red Hat Enterprise Linux Server release 6.2 (Santiago)</td>
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<tr>
<td>Compiler:</td>
<td>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</td>
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<td>Auto Parallel:</td>
<td>Yes</td>
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<td>File System:</td>
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**Test date:** Sep-2012

**Hardware Availability:** Aug-2012

**Software Availability:** Dec-2011
IBM Corporation

IBM System x3300 M4
(Intel Xeon E5-2430L, 2.00 GHz)

SPEC CFP2006 Result

SPECfp2006 = 60.7
SPECfp_base2006 = 57.8

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

L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
System State: Run level 3 (multi-user)
Test date: Sep-2012
Test sponsor: IBM Corporation
Hardware Availability: Aug-2012
Tested by: IBM Corporation
Software Availability: Dec-2011

Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem: 1 x 2 TB SATA, 7200 RPM
Other Hardware: None

Results Table

<table>
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<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</tbody>
</table>

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 setting:
Operating Mode set to Maximum Performance
Sysinfo program /home/SPECcpu1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdf5032aaa42e583f96b07f99d3
running on YungAn Wed Sep 26 00:38:31 2012
This section contains SUT (System Under Test) info as seen by
Continued on next page
IBM Corporation

IBM System x3300 M4
(Intel Xeon E5-2430L, 2.00 GHz)

**SPECfp2006 =** 60.7
**SPECfp_base2006 =** 57.8

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>IBM Corporation</td>
</tr>
<tr>
<td>Tested by:</td>
<td>IBM Corporation</td>
</tr>
<tr>
<td>Test date:</td>
<td>Sep-2012</td>
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<td>Hardware Availability:</td>
<td>Aug-2012</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Dec-2011</td>
</tr>
</tbody>
</table>

---

**Platform Notes (Continued)**

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) Xeon(R) CPU E5-2430L 0 @ 2.00GHz
  2 "physical id"s (chips)
  24 "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 : 6
  siblings : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
  cache size : 15360 KB
```

From /proc/meminfo

```
MemTotal:       99043976 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

```
/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.2 (Santiago)
```

From /etc/*release* /etc/*version*

```
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
```

```
uname -a:
  Linux YungAn 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64
  x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 25 23:48:
```

```
SPEC is set to: /home/SPECcpu1.2
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/mapper/vg_yungan-lv_home ext4 1.7T 65G 1.6T 5% /home
```

Additional information from dmidecode:

```
Memory:
  12x 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 = ""/home/SPECcpu1.2/libs/32:/home/SPECcpu1.2/libs/64"
```

Continued on next page
SPEC CFP2006 Result

IBM Corporation
IBM System x3300 M4
(Intel Xeon E5-2430L, 2.00 GHz)

SPECfp2006 = 60.7
SPECfp_base2006 = 57.8

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation
Test date: Sep-2012
Hardware Availability: Aug-2012
Software Availability: Dec-2011

General Notes (Continued)

OMP_NUM_THREADS = "12"

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
IBM Corporation
IBM System x3300 M4
(Intel Xeon E5-2430L, 2.00 GHz)

SPECfp2006 = 60.7
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CPU2006 license: 11
Test date: Sep-2012
Test sponsor: IBM Corporation
Hardware Availability: Aug-2012
Tested by: IBM Corporation
Software Availability: Dec-2011

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.lb: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:
IBM Corporation
IBM System x3300 M4
(Intel Xeon E5-2430L, 2.00 GHz)

SPECfp2006 = 60.7
SPECfp_base2006 = 57.8

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

Test date: Sep-2012
Hardware Availability: Aug-2012
Software Availability: Dec-2011

Peak Optimization Flags (Continued)

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-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)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -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)
-no-prec-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)
-no-prec-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)
-no-prec-div(pass 2) -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: -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-linux64.20120425.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-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-C.xml
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**CPU2006 license:** 11  
**Test sponsor:** IBM Corporation  
**Tested by:** IBM Corporation  
**Test date:** Sep-2012  
**Hardware Availability:** Aug-2012  
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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 v1.2.  