



SPEC[®] CFP2006 Result

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IBM Corporation

IBM System x3100 M4
(Intel Core i3-3240, 3.40 GHz)

SPECfp[®]2006 = **55.4**

SPECfp_base2006 = **54.2**

CPU2006 license: 11

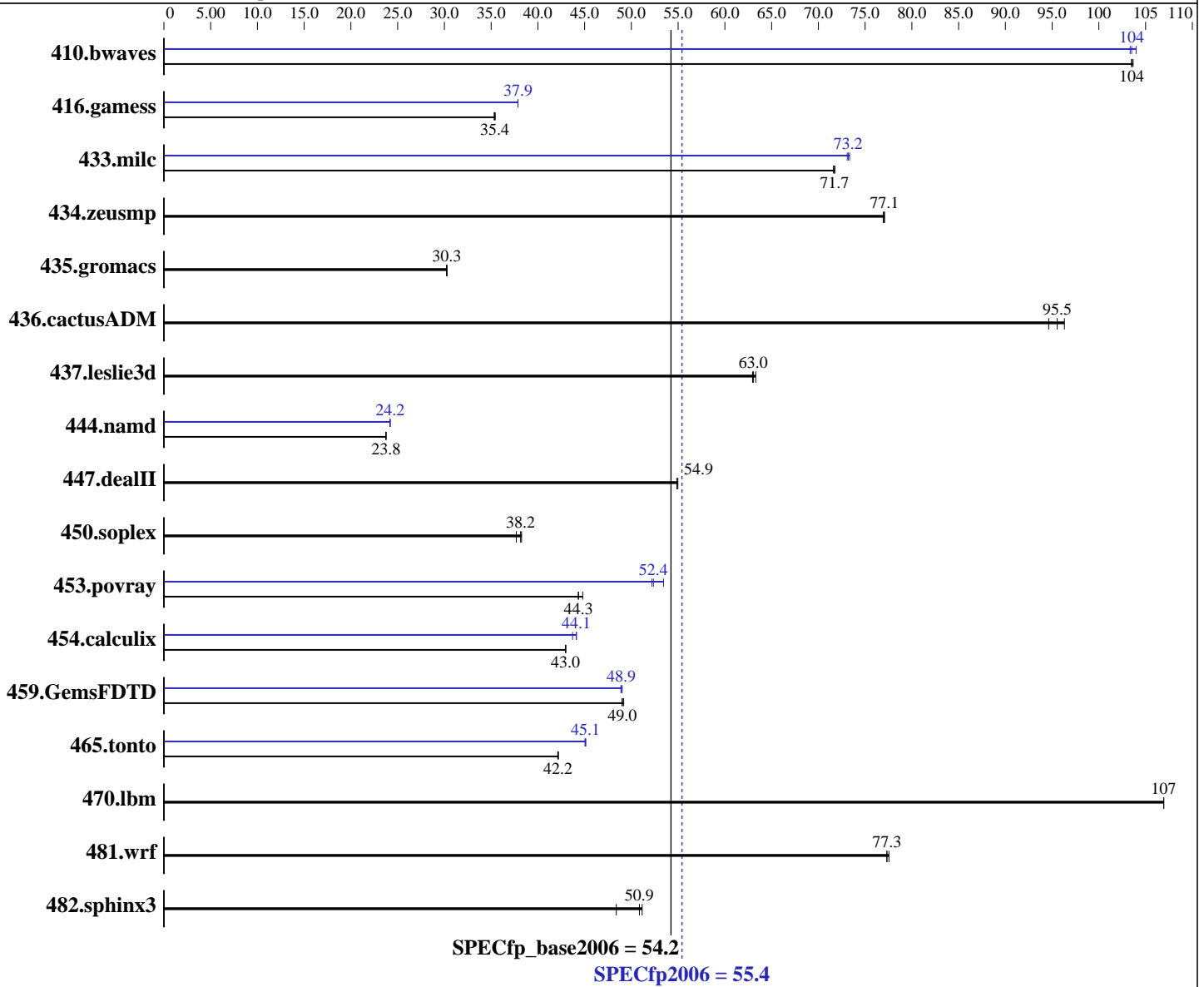
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Oct-2012

Hardware Availability: Sep-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Core i3-3240
 CPU Characteristics:
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 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

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Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 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: Yes
 File System: ext4

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>131</u>	<u>104</u>	131	104	131	104	131	104	131	103	<u>131</u>	<u>104</u>
416.gamess	553	35.4	<u>553</u>	<u>35.4</u>	554	35.3	517	37.9	<u>517</u>	<u>37.9</u>	517	37.9
433.milc	128	71.6	128	71.8	<u>128</u>	<u>71.7</u>	126	73.1	125	73.3	<u>125</u>	<u>73.2</u>
434.zeusmp	118	76.9	118	77.1	<u>118</u>	<u>77.1</u>	118	76.9	118	77.1	<u>118</u>	<u>77.1</u>
435.gromacs	<u>236</u>	<u>30.3</u>	236	30.2	236	30.3	<u>236</u>	<u>30.3</u>	236	30.2	236	30.3
436.cactusADM	126	94.6	124	96.3	<u>125</u>	<u>95.5</u>	126	94.6	124	96.3	<u>125</u>	<u>95.5</u>
437.leslie3d	149	63.3	<u>149</u>	<u>63.0</u>	149	63.0	149	63.3	<u>149</u>	<u>63.0</u>	149	63.0
444.namd	338	23.8	<u>338</u>	<u>23.8</u>	338	23.7	<u>331</u>	<u>24.2</u>	331	24.2	332	24.2
447.dealII	<u>208</u>	<u>54.9</u>	208	54.9	208	55.0	<u>208</u>	<u>54.9</u>	208	54.9	208	55.0
450.soplex	218	38.3	221	37.7	<u>219</u>	<u>38.2</u>	218	38.3	221	37.7	<u>219</u>	<u>38.2</u>
453.povray	120	44.3	119	44.8	<u>120</u>	<u>44.3</u>	102	52.2	<u>102</u>	<u>52.4</u>	99.5	53.4
454.calculix	<u>192</u>	<u>43.0</u>	192	43.0	192	43.0	189	43.7	187	44.1	<u>187</u>	<u>44.1</u>
459.GemsFDTD	217	49.0	216	49.2	<u>216</u>	<u>49.0</u>	216	49.0	217	48.9	<u>217</u>	<u>48.9</u>
465.tonto	234	42.1	233	42.2	<u>233</u>	<u>42.2</u>	218	45.1	218	45.0	<u>218</u>	<u>45.1</u>
470.lbm	<u>128</u>	<u>107</u>	128	107	128	107	<u>128</u>	<u>107</u>	128	107	128	107
481.wrf	<u>144</u>	<u>77.3</u>	144	77.5	144	77.3	<u>144</u>	<u>77.3</u>	144	77.5	144	77.3
482.sphinx3	<u>383</u>	<u>50.9</u>	403	48.4	381	51.2	<u>383</u>	<u>50.9</u>	403	48.4	381	51.2

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"

Platform Notes

BIOS Settings:
Turbo Mode enabled in BIOS
C-State enabled in BIOS
Sysinfo program /root/SPECcpul.2/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Sun Oct 21 04:57:29 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

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Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Core(TM) i3-3240 CPU @ 3.40GHz
 1 "physical id"s (chips)
 4 "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 : 2
  siblings  : 4
  physical 0: cores 0 1
  cache size : 3072 KB

From /proc/meminfo
MemTotal:      16322724 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)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost.localdomain 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 Oct 19 15:43

SPEC is set to: /root/SPECcpul.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_root
                ext4      50G   38G   9.5G  80% /

Additional information from dmidecode:
Memory:
  2x Micron 18JSF1G72AZ-1G6D1 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,scatter"
 LD_LIBRARY_PATH = "/root/SPECcpul.2/libs/32:/root/SPECcpul.2/libs/64"
 OMP_NUM_THREADS = "2"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB

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General Notes (Continued)

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

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

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Base Optimization Flags (Continued)

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: basepeak = yes

C++ benchmarks:
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

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Peak Optimization Flags (Continued)

447.dealll: 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-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.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-IVB-A.xml>



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