SPEC® CFP2006 Result

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IBM Corporation

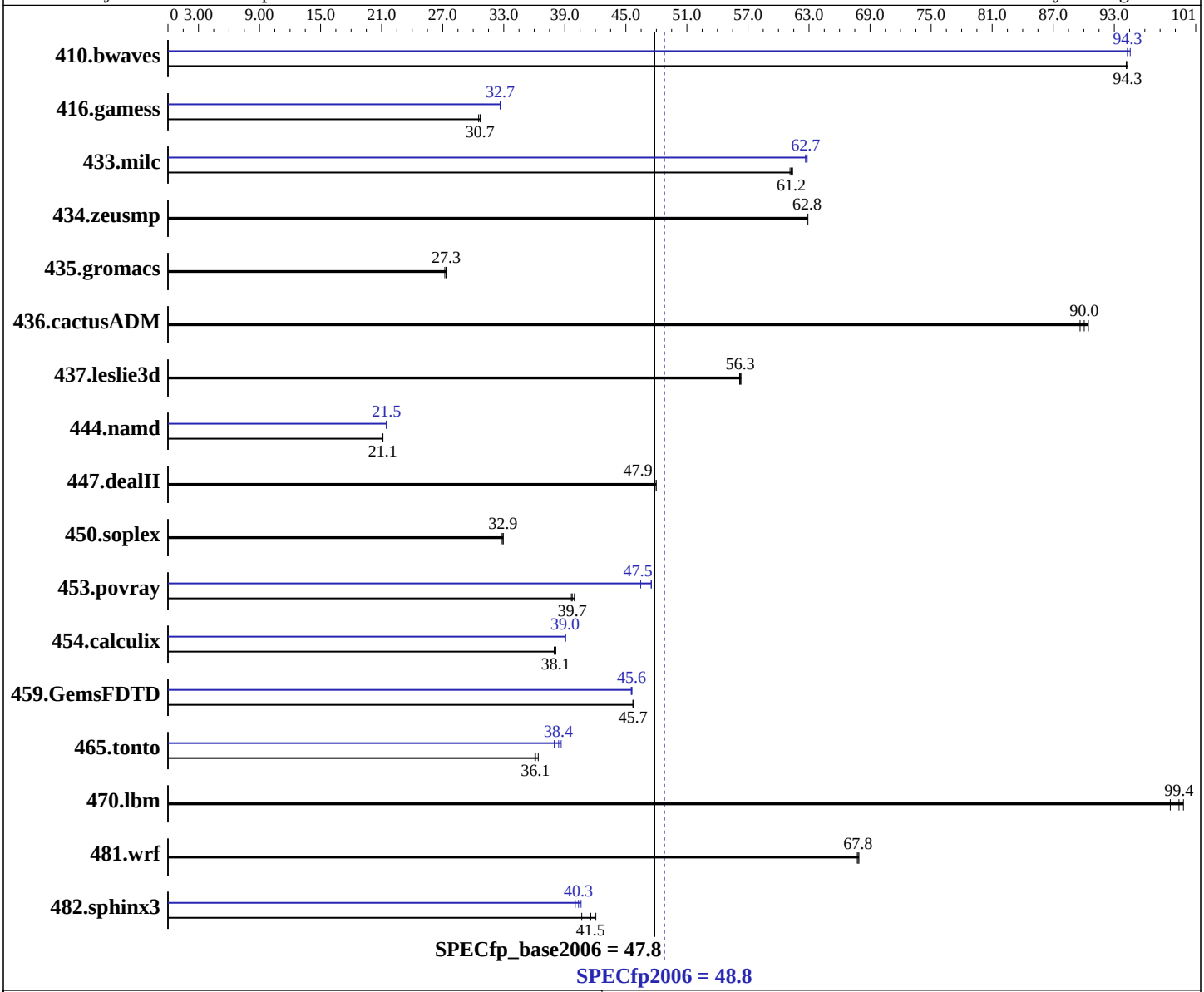
IBM System x3250 M4 (Intel Core i3-2100)

SPECfp®2006 = 48.8

SPECfp_base2006 = 47.8

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

Test date: Nov-2011
Hardware Availability: Oct-2011
Software Availability: Aug-2011



Hardware

CPU Name:	Intel Core i3-2100
CPU Characteristics:	
CPU MHz:	3100
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 6.1, 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:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
Other Hardware: None

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	**144**	**94.3**	144	94.3	144	94.2	144	94.6	**144**	**94.3**	144	94.3
416.gamess	**638**	**30.7**	641	30.5	637	30.7	599	32.7	600	32.6	**599**	**32.7**
433.milc	150	61.4	150	61.1	**150**	**61.2**	146	62.8	**146**	**62.7**	146	62.7
434.zeusmp	**145**	**62.8**	145	62.9	145	62.8	**145**	**62.8**	145	62.9	145	62.8
435.gromacs	261	27.4	**261**	**27.3**	262	27.2	261	27.4	**261**	**27.3**	262	27.2
436.cactusADM	**133**	**90.0**	132	90.5	133	89.6	**133**	**90.0**	132	90.5	133	89.6
437.leslie3d	167	56.2	**167**	**56.3**	167	56.3	167	56.2	**167**	**56.3**	167	56.3
444.namd	**380**	**21.1**	380	21.1	380	21.1	373	21.5	374	21.5	**373**	**21.5**
447.dealII	239	47.8	238	48.0	**239**	**47.9**	239	47.8	238	48.0	**239**	**47.9**
450.soplex	253	32.9	**253**	**32.9**	254	32.8	253	32.9	**253**	**32.9**	254	32.8
453.povray	133	39.9	134	39.6	**134**	**39.7**	112	47.5	**112**	**47.5**	115	46.5
454.calculix	**217**	**38.1**	217	38.1	217	38.0	211	39.1	211	39.0	**211**	**39.0**
459.GemsFDTD	**232**	**45.7**	232	45.8	232	45.7	233	45.6	233	45.5	**233**	**45.6**
465.tonto	273	36.1	270	36.4	**272**	**36.1**	**256**	**38.4**	259	38.0	255	38.6
470.lbm	138	99.8	**138**	**99.4**	139	98.5	138	99.8	**138**	**99.4**	139	98.5
481.wrf	**165**	**67.8**	165	67.7	164	67.9	**165**	**67.8**	165	67.7	164	67.9
482.sphinx3	479	40.7	**469**	**41.5**	463	42.1	480	40.6	**483**	**40.3**	487	40.0

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

Platform Notes

```
BIOS Settings:
C-State enabled in BIOS
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/root/SPECcpu12.1/smartheap:/root/SPECcpu12.1/ic12.1-libs/ia32/:/root/SPECcpu12.1/ic12.1-libs/intel64"
OMP_NUM_THREADS = "2"

 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 enabled with:
```

Continued on next page

General Notes (Continued)

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>       /proc/sys/vm/drop_caches
```

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: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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`

Continued on next page

Peak Optimization Flags (Continued)

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-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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Tested with SPEC CPU2006 v1.1.
Report generated on Thu Jul 24 01:27:59 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 December 2011.