



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

SPECfp<sup>®</sup>\_rate2006 = 198

IBM System x iDataPlex dx360 M3 (Intel Xeon L5640)

SPECfp\_rate\_base2006 = 191

CPU2006 license: 11

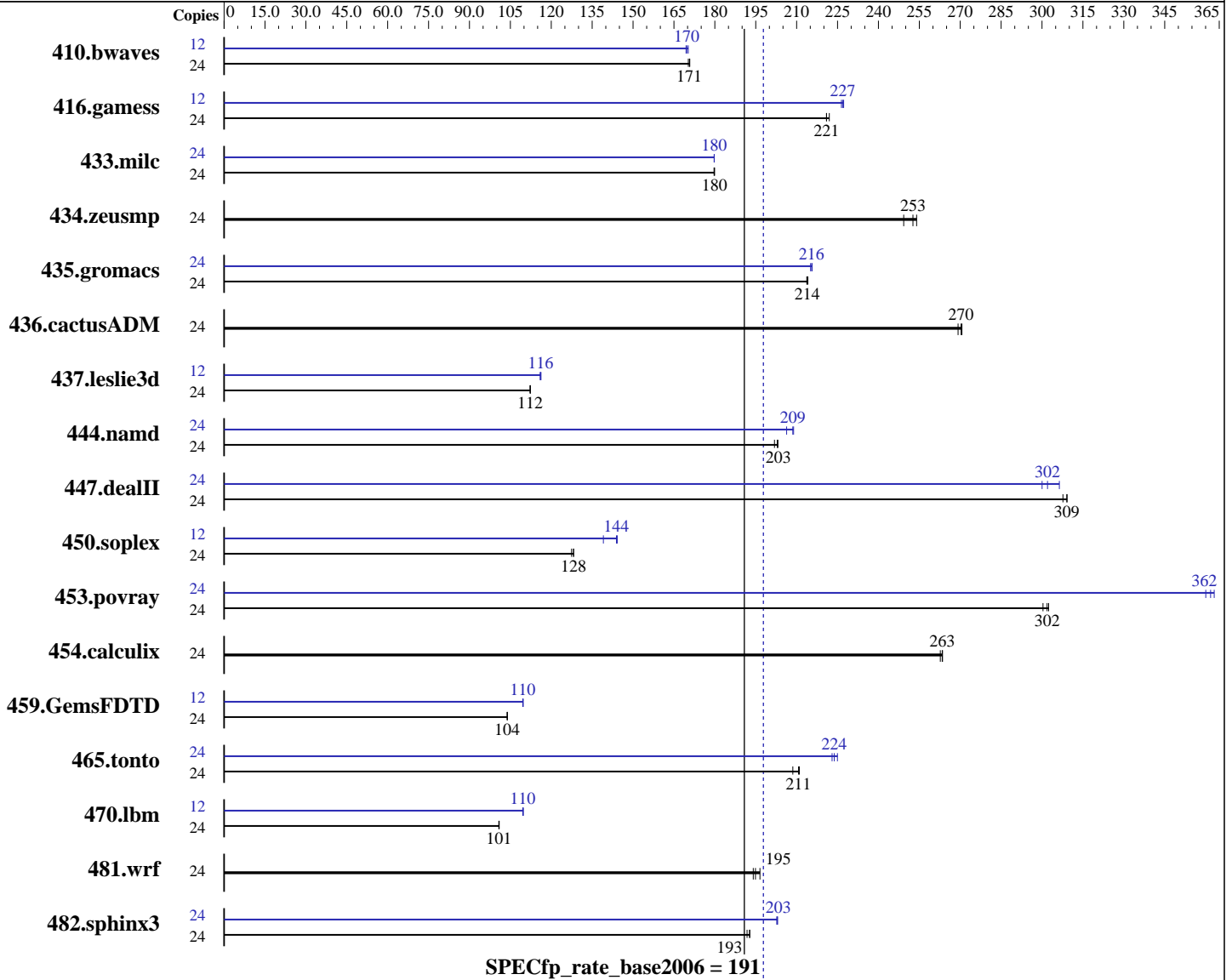
Test date: May-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon L5640  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2267  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

### Software

Operating System: SuSe Linux Enterprise Server 11 (x86\_64), Kernel 2.6.27.19-5-default  
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l\_cproc\_p\_11.1.064, l\_cprof\_p\_11.1.064  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

SPECfp\_rate2006 = 198

IBM System x iDataPlex dx360 M3 (Intel Xeon L5640)

SPECfp\_rate\_base2006 = 191

CPU2006 license: 11

Test date: May-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010

L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB PC3-10600R CL9, 2 Rank)  
 Disk Subsystem: 1 x 73 GB SAS, 15000RPM  
 Other Hardware: None

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

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1916	170	1910	171	<u>1911</u>	<u>171</u>	12	963	169	<u>961</u>	<u>170</u>	958	170
416.gamess	24	2117	222	<u>2127</u>	<u>221</u>	2127	221	12	1038	226	<u>1036</u>	<u>227</u>	1034	227
433.milc	24	<u>1225</u>	<u>180</u>	1225	180	1226	180	24	1226	180	<u>1226</u>	<u>180</u>	1225	180
434.zeusmp	24	876	249	860	254	<u>864</u>	<u>253</u>	24	876	249	860	254	<u>864</u>	<u>253</u>
435.gromacs	24	800	214	<u>801</u>	<u>214</u>	802	214	24	794	216	797	215	<u>795</u>	<u>216</u>
436.cactusADM	24	<u>1061</u>	<u>270</u>	1060	271	1065	269	24	<u>1061</u>	<u>270</u>	1060	271	1065	269
437.leslie3d	24	2007	112	2011	112	<u>2009</u>	<u>112</u>	12	<u>971</u>	<u>116</u>	971	116	973	116
444.namd	24	<u>949</u>	<u>203</u>	953	202	948	203	24	933	206	<u>923</u>	<u>209</u>	921	209
447.dealII	24	<u>888</u>	<u>309</u>	888	309	892	308	24	915	300	<u>909</u>	<u>302</u>	896	306
450.soplex	24	1571	127	<u>1562</u>	<u>128</u>	1561	128	12	719	139	694	144	<u>695</u>	<u>144</u>
453.povray	24	422	302	<u>423</u>	<u>302</u>	425	300	24	<u>353</u>	<u>362</u>	352	363	355	360
454.calculix	24	754	263	<u>752</u>	<u>263</u>	751	264	24	754	263	<u>752</u>	<u>263</u>	751	264
459.GemsFDTD	24	2451	104	2453	104	<u>2451</u>	<u>104</u>	12	<u>1162</u>	<u>110</u>	1160	110	1162	110
465.tonto	24	1119	211	<u>1121</u>	<u>211</u>	1132	209	24	<u>1055</u>	<u>224</u>	1050	225	1059	223
470.lbm	24	3268	101	<u>3271</u>	<u>101</u>	3272	101	12	1502	110	<u>1504</u>	<u>110</u>	1505	110
481.wrf	24	1364	197	1381	194	<u>1376</u>	<u>195</u>	24	1364	197	1381	194	<u>1376</u>	<u>195</u>
482.sphinx3	24	2439	192	2426	193	<u>2427</u>	<u>193</u>	24	2304	203	2307	203	<u>2306</u>	<u>203</u>

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.  
numactl was used to bind copies to the cores

## Platform Notes

Turbo Mode Enable  
Turbo Boost set to Traditional  
CPU C State Enable  
Data Reuse Disable



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 198

IBM System x iDataPlex dx360 M3 (Intel Xeon L5640)

SPECfp\_rate\_base2006 = 191

CPU2006 license: 11

Test date: May-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010

## General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502  
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

## 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:

-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 198

IBM System x iDataPlex dx360 M3 (Intel Xeon L5640)

SPECfp\_rate\_base2006 = 191

CPU2006 license: 11

Test date: May-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010

## Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static

## 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  
 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 198

IBM System x iDataPlex dx360 M3 (Intel Xeon L5640)

SPECfp\_rate\_base2006 = 191

CPU2006 license: 11

Test date: May-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias -opt-prefetch

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias -auto-ilp32

447.dealIII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias -scalar-rep-

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -auto -inline-calloc -opt-malloc-options=3

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 198

IBM System x iDataPlex dx360 M3 (Intel Xeon L5640)

SPECfp\_rate\_base2006 = 191

CPU2006 license: 11

Test date: May-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010

## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100601.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100601.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 08:30:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 22 June 2010.