



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

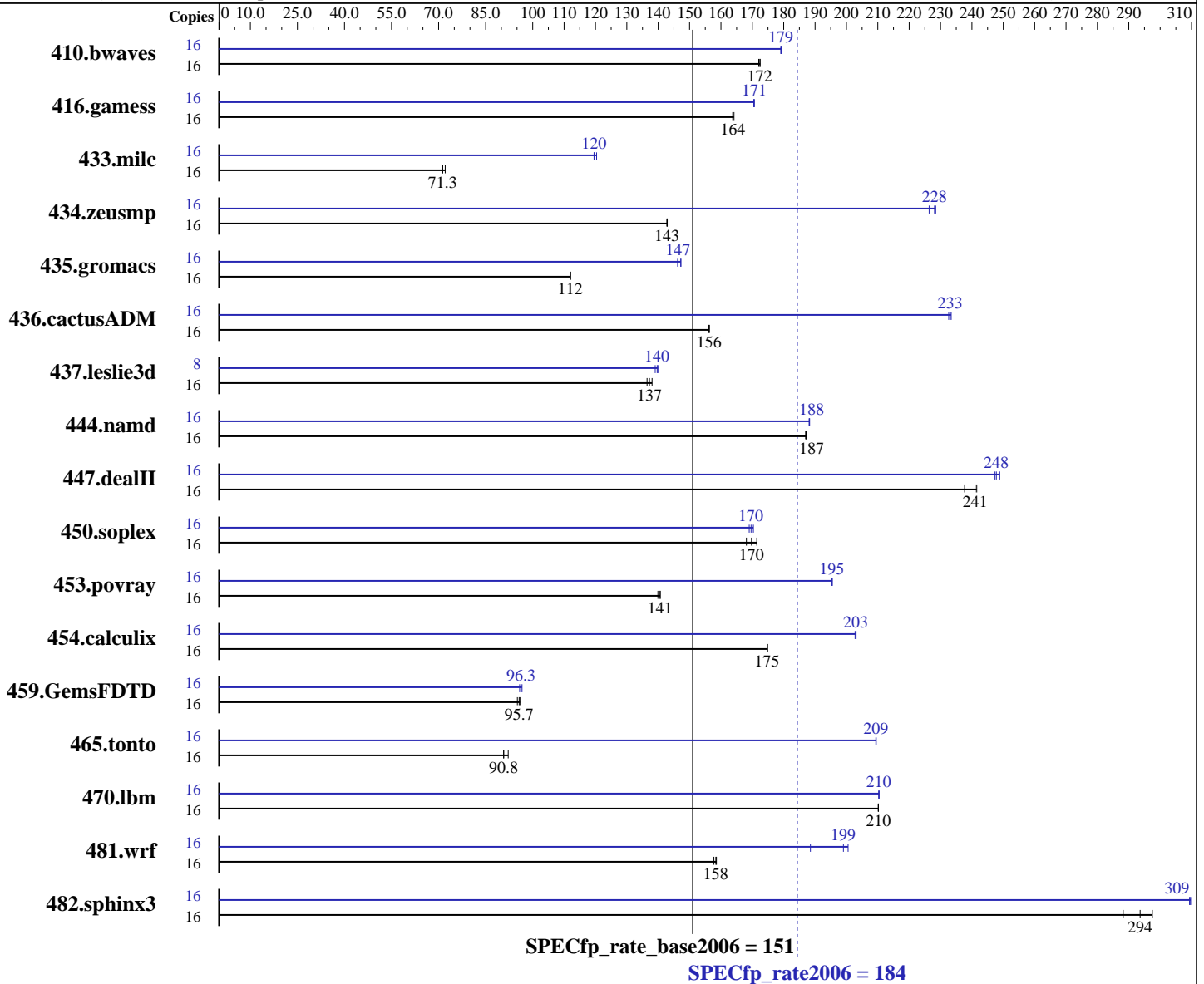
IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

SPECfp®\_rate2006 = 184

SPECfp\_rate\_base2006 = 151

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

Test date: Mar-2009  
Hardware Availability: May-2009  
Software Availability: Mar-2009



### Hardware

CPU Name: POWER6+  
CPU Characteristics:  
CPU MHz: 4200  
FPU: Integrated  
CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip, 2 threads/core  
CPU(s) orderable: 8 cores  
Primary Cache: 64 KB I + 64 KB D on chip per core  
Secondary Cache: 4 MB I+D on chip per core

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 11  
Compiler: IBM XL C/C++ for Linux, V10.1 Updated with the Mar2009 PTF.  
IBM XL Fortran for Linux, V12.1 Updated with the Mar2009 PTF.  
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

IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

SPECfp\_rate2006 = 184

SPECfp\_rate\_base2006 = 151

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Mar-2009

Hardware Availability: May-2009

Software Availability: Mar-2009

L3 Cache: 32 MB I+D off chip per chip  
Other Cache: None  
Memory: 64 GB (16x4 GB) DDR2 667 MHz  
Disk Subsystem: 1x146 GB SAS 15K RPM  
Other Hardware: None

Base Pointers: 32-bit  
Peak Pointers: 32/64-bit  
Other Software: -Post-Link Optimization for Linux on POWER, Version 5.4.0-21  
-MicroQuill SmartHeap 8.1

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1264	172	<u>1261</u>	<u>172</u>	1261	172	16	<u>1214</u>	<u>179</u>	1214	179	1213	179
416.gamess	16	<u>1912</u>	<u>164</u>	1908	164	1913	164	16	<u>1836</u>	<u>171</u>	1836	171	1838	170
433.milc	16	2037	72.1	2061	71.3	<u>2060</u>	<u>71.3</u>	16	1220	120	<u>1228</u>	<u>120</u>	1229	120
434.zeusmp	16	<u>1020</u>	<u>143</u>	1020	143	1019	143	16	637	228	643	226	<u>638</u>	<u>228</u>
435.gromacs	16	1020	112	<u>1020</u>	<u>112</u>	1020	112	16	781	146	776	147	<u>776</u>	<u>147</u>
436.cactusADM	16	1224	156	1224	156	<u>1224</u>	<u>156</u>	16	819	233	822	233	<u>820</u>	<u>233</u>
437.leslie3d	16	<u>1096</u>	<u>137</u>	1102	136	1090	138	8	541	139	<u>538</u>	<u>140</u>	537	140
444.namd	16	<u>686</u>	<u>187</u>	686	187	685	187	16	682	188	682	188	<u>682</u>	<u>188</u>
447.dealII	16	770	238	<u>759</u>	<u>241</u>	758	242	16	740	247	<u>739</u>	<u>248</u>	735	249
450.soplex	16	<u>786</u>	<u>170</u>	794	168	778	171	16	<u>787</u>	<u>170</u>	783	170	790	169
453.povray	16	605	141	608	140	<u>605</u>	<u>141</u>	16	435	196	<u>436</u>	<u>195</u>	436	195
454.calculix	16	<u>755</u>	<u>175</u>	755	175	756	175	16	<u>650</u>	<u>203</u>	651	203	650	203
459.GemsFDTD	16	<u>1774</u>	<u>95.7</u>	1785	95.1	1770	95.9	16	1758	96.6	1772	95.8	<u>1763</u>	<u>96.3</u>
465.tonto	16	1708	92.2	1735	90.7	<u>1735</u>	<u>90.8</u>	16	751	210	752	209	<u>752</u>	<u>209</u>
470.lbm	16	1046	210	1046	210	<u>1046</u>	<u>210</u>	16	1045	210	1045	210	<u>1045</u>	<u>210</u>
481.wrf	16	<u>1129</u>	<u>158</u>	1127	159	1133	158	16	891	201	948	189	<u>898</u>	<u>199</u>
482.sphinx3	16	1048	298	<u>1062</u>	<u>294</u>	1082	288	16	<u>1008</u>	<u>309</u>	1008	309	1007	310

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.  
Benchmarks bound to a processor using numactl on the submit command.

## General Notes

kernel release 2.6.27.19-5-ppc64.  
See flags file for details on following settings.  
ulimit -s (stack) set to 1048576.  
System configured with libhugetlbfs library for application access to large  
Large pages reserved as follows by root user:  
echo 1600 > /proc/sys/vm/nr\_hugepages  
Environment variables set before executing benchmarks.  
export HUGETLB\_VERBOSE=0  
export HUGETLB\_MORECORE=yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

**SPECfp\_rate2006 = 184**

**SPECfp\_rate\_base2006 = 151**

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

**Test date:** Mar-2009  
**Hardware Availability:** May-2009  
**Software Availability:** Mar-2009

## General Notes (Continued)

```
export XLFRTEOPTS=intrinths=1
IBM Post-Link optimization tool was used for these benchmarks, with options
433.milc : "-imullX" (instrumentation phase), "-O4 -omullX" (optimizatio
435.gromacs : same as 433.milc
436.cactusADM : same as 433.milc
482.sphinx3 : same as 433.milc
453.povray : "-imullX" (instrumentation phase), "-O4 -omullX -see 1 -ihf
465.tonto : "-O4" (optimization phase)
```

## Base Compiler Invocation

C benchmarks:  
xlc -qlanglvl=extc99

C++ benchmarks:  
xlC

Fortran benchmarks:  
xlf95

Benchmarks using both Fortran and C:  
xlc -qlanglvl=extc99 xlf95

## Base Portability Flags

```
410.bwaves: -qfixed
416.gamess: -qfixed
434.zeusmp: -qfixed
435.gromacs: -qfixed -qextname
436.cactusADM: -qfixed -qextname
437.leslie3d: -qfixed
454.calculix: -qfixed -qextname
481.wrf: -DNOUNDERSCORE
482.sphinx3: -qchars=signed
```

## Base Optimization Flags

C benchmarks:  
-O5 -qarch=pwr6 -qtune=pwr6 -qnoenablevmx -lhugetlbfs

C++ benchmarks:  
-O5 -qarch=pwr6 -qtune=pwr6 -qrtti -qnoenablevmx -qstaticlink  
-Wl,--whole-archive /usr/lib/libhugetlbfs.a -Wl,--no-whole-archive

Fortran benchmarks:  
-O5 -qarch=pwr6 -qtune=pwr6 -qsmallstack=dynlenonheap -qalias=nostd  
-qnoenablevmx -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

**SPECfp\_rate2006 = 184**

**SPECfp\_rate\_base2006 = 151**

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Mar-2009

**Hardware Availability:** May-2009

**Software Availability:** Mar-2009

## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

`-O5 -qarch=pwr6 -qtune=pwr6 -qnoenablevmx -qsmallstack=dynlenonheap  
-qalias=nostd -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT`

## Base Other Flags

C benchmarks:

`-qipa=noobject -qipa=threads`

C++ benchmarks:

`-qipa=noobject -qipa=threads`

Fortran benchmarks:

`-qipa=noobject -qipa=threads`

Benchmarks using both Fortran and C:

`-qipa=noobject -qipa=threads`

## Peak Compiler Invocation

C benchmarks:

`xlc -qlanglvl=extc99`

C++ benchmarks:

`xlC`

Fortran benchmarks:

`xlf95`

Benchmarks using both Fortran and C:

`xlc -qlanglvl=extc99 xlf95`

## Peak Portability Flags

410.bwaves: `-qfixed`  
416.gamess: `-qfixed`  
434.zeusmp: `-qfixed`  
435.gromacs: `-qfixed -qextname`  
436.cactusADM: `-qfixed -qextname`  
437.leslie3d: `-qfixed`  
454.calculix: `-qfixed -qextname`

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

**SPECfp\_rate2006 = 184**

**SPECfp\_rate\_base2006 = 151**

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Mar-2009

**Hardware Availability:** May-2009

**Software Availability:** Mar-2009

## Peak Portability Flags (Continued)

481.wrf: -DNOUNDERSCORE  
482.sphinx3: -qchars=signed

## Peak Optimization Flags

C benchmarks:

433.milc: -Wl,-q -O5 -qarch=pwr6 -qtune=pwr6 -qnoenablevmx  
-lhugetlbfs

470.lbm: -qpdf1(pass 1) -qpdf2(pass 2) -O3 -qarch=pwr6 -qtune=pwr6  
-B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT  
-q64

482.sphinx3: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qarch=pwr6  
-qtune=pwr6 -lhugetlbfs

C++ benchmarks:

444.namd: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr6 -qtune=pwr6

447.dealII: -O5 -qarch=pwr6 -qtune=pwr6 -qrtti -qnoenablevmx  
-qstaticlink -Wl,--whole-archive /usr/lib/libsmartheap.a  
-Wl,--no-whole-archive

450.soplex: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qarch=pwr6 -qtune=pwr6  
-qstrict -lhugetlbfs

453.povray: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr6  
-qtune=pwr6 -lsmartheap

Fortran benchmarks:

410.bwaves: -O5 -qarch=pwr6 -qtune=pwr6 -qsmallstack=dynlenonheap  
-lhugetlbfs

416.gamess: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr6 -qtune=pwr6  
-qalias=nostd -qnoenablevmx

434.zeusmp: -qpdf1(pass 1) -qpdf2(pass 2) -O3 -qarch=pwr6 -qtune=pwr6  
-qxlf90=nosignedzero -B/usr/share/libhugetlbfs/ -tl  
-Wl,--hugetlbfs-link=BDT

437.leslie3d: -O5 -qarch=pwr6 -qtune=pwr6 -qsmallstack=dynlenonheap  
-qnoenablevmx -B/usr/share/libhugetlbfs/ -tl  
-Wl,--hugetlbfs-link=BDT

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

**SPECfp\_rate2006 = 184**

**SPECfp\_rate\_base2006 = 151**

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Mar-2009

**Hardware Availability:** May-2009

**Software Availability:** Mar-2009

## Peak Optimization Flags (Continued)

459.GemsFDTD: -O5 -qarch=pwr6 -qtune=pwr6 -B/usr/share/libhugetlbfs/ -tl  
-Wl,--hugetlbfs-link=BDT -q64

465.tonto: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr6  
-qtune=pwr6 -q64 -lsmartheap64 -lxlf90\_r

Benchmarks using both Fortran and C:

435.gromacs: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr6  
-qtune=pwr6 -lhugetlbfs

436.cactusADM: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O2 -qarch=pwr6  
-qtune=pwr6 -qnostrict -lhugetlbfs

454.calculix: -O4 -qarch=pwr6 -qtune=pwr6 -B/usr/share/libhugetlbfs/ -tl  
-Wl,--hugetlbfs-link=BDT

481.wrf: -O5 -qarch=pwr6 -qtune=pwr6 -qnoenablevmx -q64  
-lhugetlbfs

## Peak Other Flags

C benchmarks:

-qipa=noobject -qipa=threads

C++ benchmarks:

-qipa=noobject -qipa=threads

Fortran benchmarks:

-qipa=noobject -qipa=threads

Benchmarks using both Fortran and C:

-qipa=noobject -qipa=threads

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

<http://www.spec.org/cpu2006/flags/IBM-Linux-XL.html>

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

<http://www.spec.org/cpu2006/flags/IBM-Linux-XL.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

IBM BladeCenter JS43 Express (4.2 GHz, 8 core, SLES)

SPECfp\_rate2006 = 184

SPECfp\_rate\_base2006 = 151

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Mar-2009

**Hardware Availability:** May-2009

**Software Availability:** Mar-2009

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 Tue Jul 22 23:53:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 12 May 2009.