



# SPEC<sup>®</sup> CINT2006 Result

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## IBM Corporation

SPECint<sup>®</sup>\_rate2006 = 122

## IBM System p 570 (4.7 GHz, 4 core)

SPECint\_rate\_base2006 = 106

CPU2006 license: 11

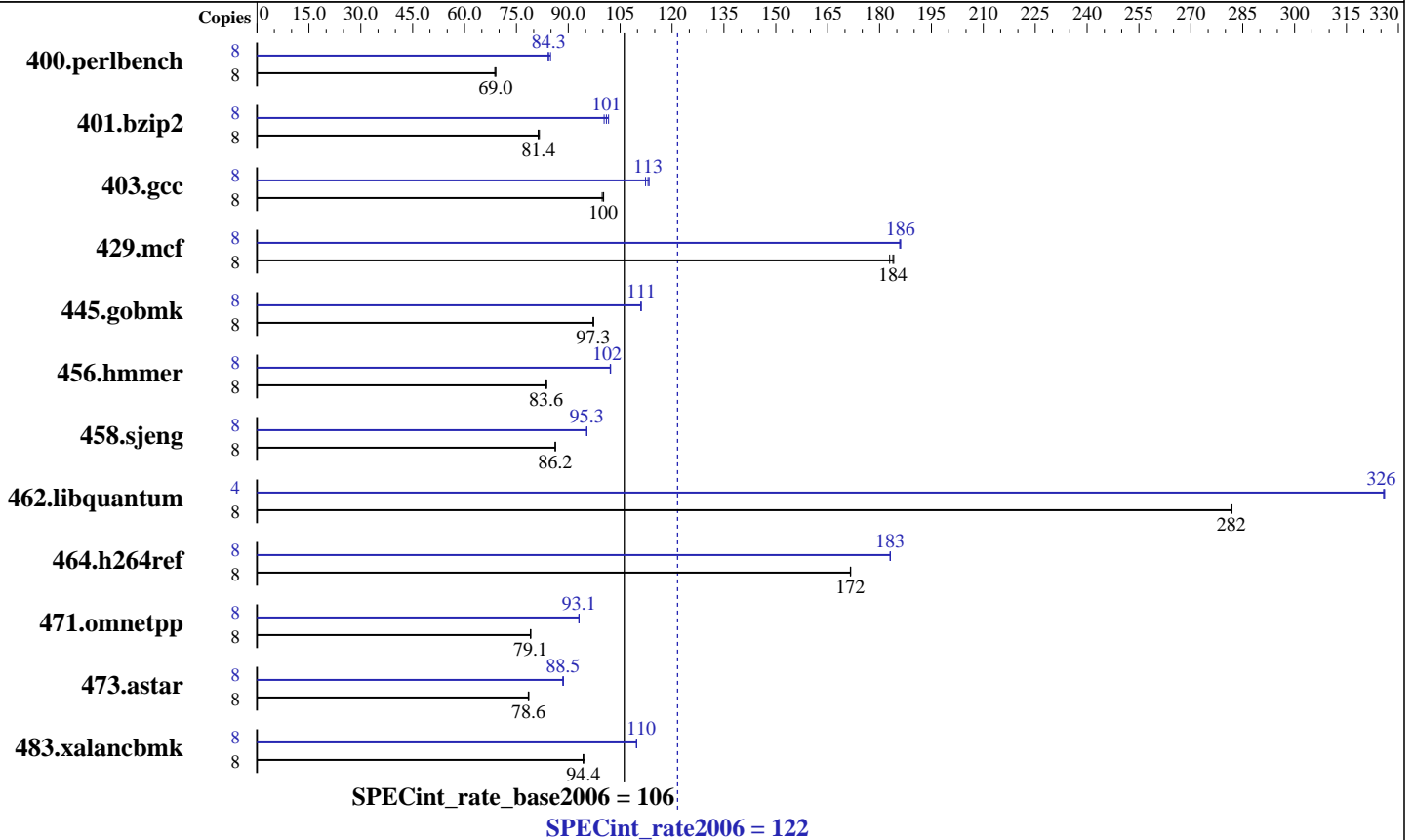
Test date: May-2007

Test sponsor: IBM Corporation

Hardware Availability: Jun-2007

Tested by: IBM Corporation

Software Availability: Jun-2007



### Hardware

CPU Name: POWER6  
 CPU Characteristics:  
 CPU MHz: 4700  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4,8,12,16 cores  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 4 MB I+D on chip per core  
 L3 Cache: 32 MB I+D off chip per chip  
 Other Cache: None  
 Memory: 32 GB (16x2 GB) DDR2 667 MHz  
 Disk Subsystem: 1x73 GB 1x146 GB SAS 15K RPM  
 Other Hardware: None

### Software

Operating System: IBM AIX 5L V5.3  
 Compiler: XL C/C++ Enterprise Edition Version 9.0 for AIX  
 Auto Parallel: No  
 File System: AIX/JFS2  
 System State: Multi-user  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: --



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## Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	1137	68.8	<b>1133</b>	<b>69.0</b>	1132	69.0	8	<b>927</b>	<b>84.3</b>	929	84.2	921	84.9
401.bzip2	8	946	81.6	950	81.3	<b>948</b>	<b>81.4</b>	8	769	100	<b>764</b>	<b>101</b>	759	102
403.gcc	8	643	100	<b>643</b>	<b>100</b>	645	99.8	8	<b>570</b>	<b>113</b>	573	112	568	113
429.mcf	8	399	183	<b>397</b>	<b>184</b>	396	184	8	392	186	393	186	<b>392</b>	<b>186</b>
445.gobmk	8	<b>863</b>	<b>97.3</b>	862	97.3	864	97.2	8	756	111	<b>756</b>	<b>111</b>	756	111
456.hammer	8	893	83.6	891	83.7	<b>893</b>	<b>83.6</b>	8	731	102	730	102	<b>731</b>	<b>102</b>
458.sjeng	8	<b>1123</b>	<b>86.2</b>	1123	86.2	1122	86.3	8	1015	95.3	1015	95.3	<b>1015</b>	<b>95.3</b>
462.libquantum	8	588	282	<b>588</b>	<b>282</b>	589	282	4	<b>254</b>	<b>326</b>	254	326	254	326
464.h264ref	8	1032	172	<b>1032</b>	<b>172</b>	1031	172	8	<b>967</b>	<b>183</b>	967	183	967	183
471.omnetpp	8	633	79.0	<b>632</b>	<b>79.1</b>	632	79.1	8	537	93.1	<b>537</b>	<b>93.1</b>	537	93.1
473.astar	8	<b>715</b>	<b>78.6</b>	716	78.4	715	78.6	8	<b>635</b>	<b>88.5</b>	634	88.6	635	88.4
483.xalancbmk	8	<b>585</b>	<b>94.4</b>	585	94.3	583	94.7	8	503	110	503	110	<b>503</b>	<b>110</b>

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

## General Notes

AIX 5L V5.3 updated with the 5300-06 Technology Level.

See flags file for details on following settings.

all ulimits set to unlimited

Environment variables set before executing benchmarks:

MALLOCOPTIONS=pool

MEMORY\_AFFINITY=MCM

XLFRTEOPTS=intrinthds=1

System set to "Enhanced" mode when defining partition on HMC

1536 pages of size 16M defined on systems with vmo command

fdpr binary optimization tool used for peak versions of

401.bzip2 403.gcc 429.mcf 456.hammer 462.libquantum 473.astar

submit used to bind benchmark to a processor using "bindprocessor"

The "IBM System p 570" and "IBM System i 570" are electronically equivalent.

The results have been measured on the "IBM System p 570" model.

## Base Compiler Invocation

C benchmarks:

/usr/vac/bin/xlc -qlanglvl=extc99

C++ benchmarks:

/usr/vacpp/bin/xlC



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_AIX  
462.libquantum: -DSPEC\_CPU\_AIX  
464.h264ref: -DSPEC\_CPU\_AIX -qchars=signed  
483.xalancbmk: -DSPEC\_CPU\_AIX

## Base Optimization Flags

C benchmarks:  
-bmaxdata:0x50000000 -O5 -qlargepage -D\_ILS\_MACROS -qalias=noansi  
-qalloca -blpdata  
C++ benchmarks:  
-bmaxdata:0x20000000 -O5 -qlargepage -D\_ILS\_MACROS -qrtti=all  
-blpdata

## Base Other Flags

C benchmarks:  
-qipa=noobject -qipa=threads -qsuppress=1500-036  
C++ benchmarks:  
-qipa=noobject -qipa=threads -qsuppress=1500-036

## Peak Compiler Invocation

C benchmarks:  
/usr/vac/bin/xlc -qlanglvl=extc99  
C++ benchmarks:  
/usr/vacpp/bin/xlc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_AIX  
403.gcc: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_AIX  
464.h264ref: -DSPEC\_CPU\_AIX -qchars=signed  
483.xalancbmk: -DSPEC\_CPU\_AIX



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## Peak Optimization Flags

C benchmarks:

400.perlbench: -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -qenablevmx -qvecnvols -D\_ILS\_MACROS  
-qalias=noansi -blpdata

401.bzip2: -bmaxdata:0x4ffffffc -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -qenablevmx -qvecnvols -D\_ILS\_MACROS -blpdata

403.gcc: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage  
-D\_ILS\_MACROS -qalloca -q64 -blpdata

429.mcf: -bmaxdata:0x50000000 -O5 -qlargepage -qenablevmx  
-qvecnvols -D\_ILS\_MACROS -blpdata

445.gobmk: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx  
-qvecnvols -D\_ILS\_MACROS -blpdata

456.hmmr: -O5 -qlargepage -D\_ILS\_MACROS -blpdata

458.sjeng: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage -qenablevmx  
-qvecnvols -D\_ILS\_MACROS -blpdata

462.libquantum: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx  
-qvecnvols -D\_ILS\_MACROS -q64 -blpdata

464.h264ref: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage  
-D\_ILS\_MACROS -blpdata

C++ benchmarks:

471.omnetpp: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -qenablevmx -qvecnvols -D\_ILS\_MACROS  
-qalign=natural -qrtti=all -qinlglue -blpdata

473.astar: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -qenablevmx -qvecnvols -D\_ILS\_MACROS -blpdata

483.xalancbmk: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -D\_ILS\_MACROS -qinlglue -D\_\_IBM\_FAST\_VECTOR  
-blpdata

## Peak Other Flags

C benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

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## Peak Other Flags (Continued)

C++ benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.html)

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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