



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 874

IBM Power 730 Express (4.2 GHz, 16 core)

SPECint_rate_base2006 = 615

CPU2006 license: 11

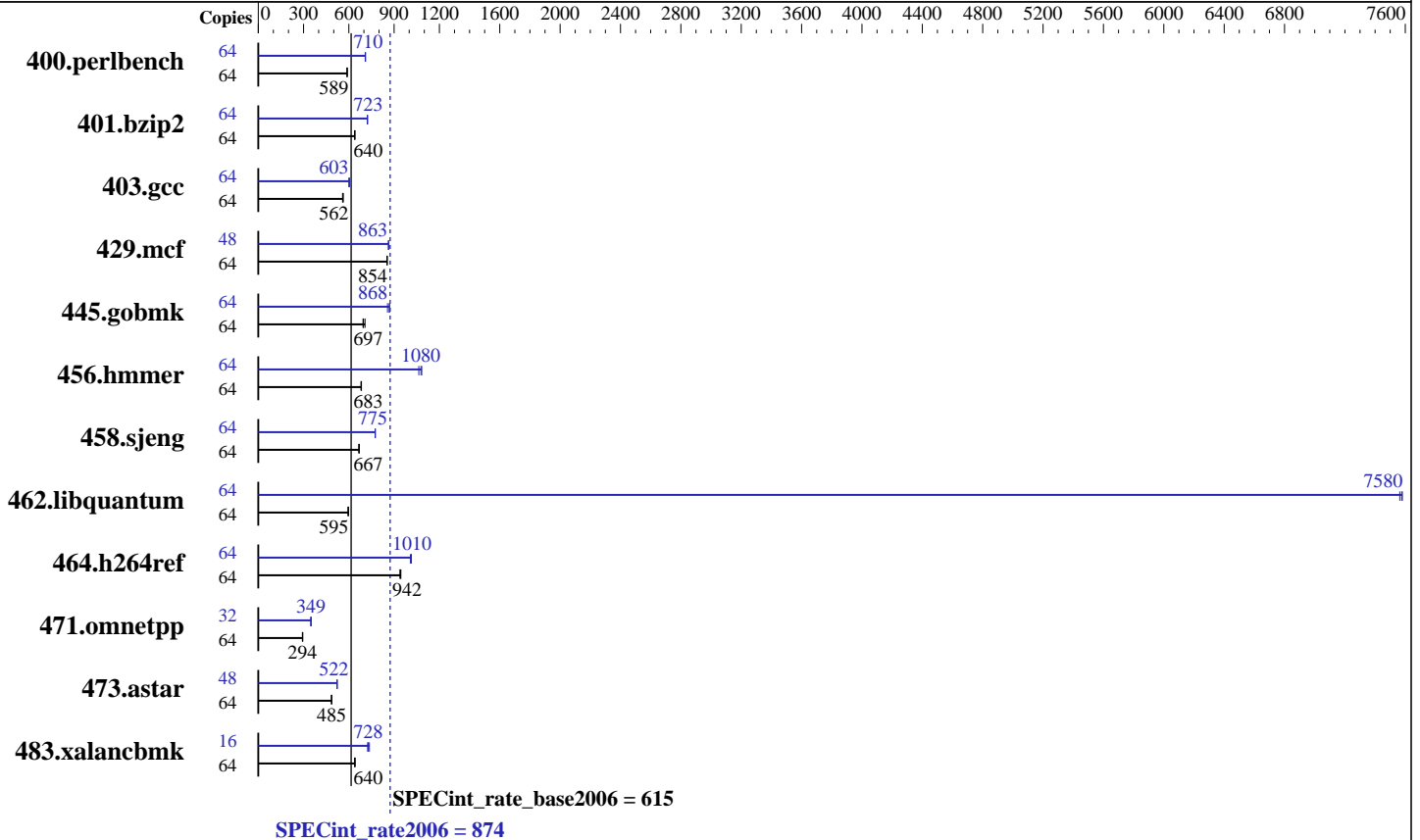
Test date: Jan-2013

Test sponsor: IBM Corporation

Hardware Availability: Feb-2013

Tested by: IBM Corporation

Software Availability: Feb-2013



Hardware

CPU Name: POWER7+
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 4.540 GHz
 CPU MHz: 4228
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 4 threads/core
 CPU(s) orderable: 8, 16 cores
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 10 MB I+D on chip per core
 Other Cache: None
 Memory: 128 GB (16 x 8 GB) DDR3 1066 MHz
 Disk Subsystem: 2 x 177 GB Raid0 SFF-1 SSD
 Other Hardware: None

Software

Operating System: IBM AIX V7.1
 Compiler: C/C++: Version 12.1 of IBM XL C/C++ for AIX
 Auto Parallel: No
 File System: AIX/JFS2
 System State: Multi-user
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: None



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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	64	1065	587	1062	589	1060	590	64	881	710	883	709	880	711
401.bzip2	64	964	640	968	638	965	640	64	854	723	853	724	854	723
403.gcc	64	923	558	917	562	916	562	64	853	604	858	600	855	603
429.mcf	64	684	854	684	854	685	853	48	507	864	507	863	507	863
445.gobmk	64	967	694	963	697	949	707	64	774	868	784	856	771	870
456.hammer	64	875	683	874	684	877	680	64	551	1080	561	1060	554	1080
458.sjeng	64	1161	667	1162	666	1156	670	64	1000	774	1000	775	999	776
462.libquantum	64	2218	598	2228	595	2228	595	64	175	7560	175	7580	175	7580
464.h264ref	64	1504	942	1499	945	1509	939	64	1396	1010	1396	1010	1405	1010
471.omnetpp	64	1360	294	1359	294	1369	292	32	575	348	572	349	571	350
473.astar	64	926	485	926	485	924	486	48	646	522	644	523	646	521
483.xalanbmk	64	690	640	688	642	692	638	16	152	725	152	728	150	736

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

Compiler Invocation Notes

C/C++ compiler updated to November 2012 PTF
Version: 12.01.0000.0002

Peak Tuning Notes

```

400.perlbench fdpr options: -O4 -cbpth -1 -sdp -1
401.bzip2 fdpr options: -O4 -vrox -nobldcg -sdp -1
403.gcc fdpr options: -O4 -cbpth -1 -sdp -1
429.mcf fdpr options: -O3
445.gobmk fdpr options: -O3
456.hammer fdpr options: -O4 -nodp
458.sjeng fdpr options: -O3
464.h264ref fdpr options: -O4 -sdp -1 -vrox -lu -1
473.astar fdpr options: -O3 -vrox -bldcg
483.xalanbmk fdpr options: -O3

```

Submit Notes

The config file option 'submit' was used to assign benchmark copy to specific kernel thread using the "bindprocessor" command (see flags file for details).



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Operating System Notes

AIX updated to V7.1 TL 2 SP2

All ulimits set to unlimited.

6400 16M large pages defined with vmo command

General Notes

Environment variables set by runspec before the start of the run:

MALLOCOPTIONS = "pool"

MEMORY_AFFINITY = "MCM"

XLFRTEOPTS = "intrinthds=1"

Base Compiler Invocation

C benchmarks:

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

C++ benchmarks:

/usr/vacpp/bin/xlC

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:

-qipa=threads -bmaxdata:0x50000000 -qlargepage -O5 -qsimd -qvecnvml
-D_ILS_MACROS -qalias=noansi -qalloca -blpdata

C++ benchmarks:

-qipa=threads -bmaxdata:0x20000000 -qlargepage -O4 -D_ILS_MACROS
-qrtti=all -D__IBM_FAST_SET_MAP_ITERATOR -blpdata

Base Other Flags

C benchmarks:

-qipa=noobject -qsuppress=1500-036

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Base Other Flags (Continued)

C++ benchmarks:

-qipa=noobject -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
462.libquantum: -DSPEC_CPU_AIX
464.h264ref: -DSPEC_CPU_AIX -qchars=signed
483.xalancbmk: -DSPEC_CPU_AIX

Peak Optimization Flags

C benchmarks:

400.perlbench: -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O2
-qarch=auto -qtune=auto -D_ILS_MACROS -qalias=noansi
-blpdata -btextpsize:64K

401.bzip2: -qipa=threads -bmaxdata:0x50000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O3 -qarch=auto -qtune=auto -qlargepage
-D_ILS_MACROS -blpdata -btextpsize:64K

403.gcc: -qipa=threads -bmaxdata:0x50000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -qalloca
-blpdata -btextpsize:64K

429.mcf: -qipa=threads -bmaxdata:0x50000000 -O5 -qlargepage
-D_ILS_MACROS -blpdata -btextpsize:64K

445.gobmk: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -D_ILS_MACROS -blpdata -btextpsize:64K

456.hmmer: -qipa=threads -O5 -qsimd -qvecnvml -qassert=refalign
-qipa=inline=threshold=2888 -qipa=inline=limit=11880
-D_ILS_MACROS -blpdata -btextpsize:64K

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Peak Optimization Flags (Continued)

458.sjeng: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O4
-D_ILS_MACROS -blpdata -btextpsize:64K

462.libquantum: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -q64
-qlargepage -D_ILS_MACROS -blpdata -btextpsize:64K

464.h264ref: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qsimd
-qvecnvoll -D_ILS_MACROS -blpdata -btextpsize:64K

C++ benchmarks:

471.omnetpp: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O4 -qsimd -qvecnvoll -D_ILS_MACROS
-qalign=natural -qrtti=all -qinlglue
-D__IBM_FAST_SET_MAP_ITERATOR -blpdata -btextpsize:64K

473.astar: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -qinlglue
-qalign=natural -blpdata -btextpsize:64K

483.xalancbmk: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O4 -qlargepage -qipa=partition=large
-D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR -blpdata
-btextpsize:64K

Peak Other Flags

C benchmarks (except as noted below):

-qipa=noobject -qsuppress=1500-036

400.perlbench: -qsuppress=1500-036

C++ benchmarks:

-qipa=noobject -qsuppress=1500-036

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/IBM-XL.20110613.html>

<http://www.spec.org/cpu2006/flags/IBM-AIX.20110613.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/IBM-XL.20110613.xml>

<http://www.spec.org/cpu2006/flags/IBM-AIX.20110613.xml>



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