



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 2530

IBM Power 780 (3.86 GHz, 64 core)

SPECint_rate_base2006 = 2300

CPU2006 license: 11

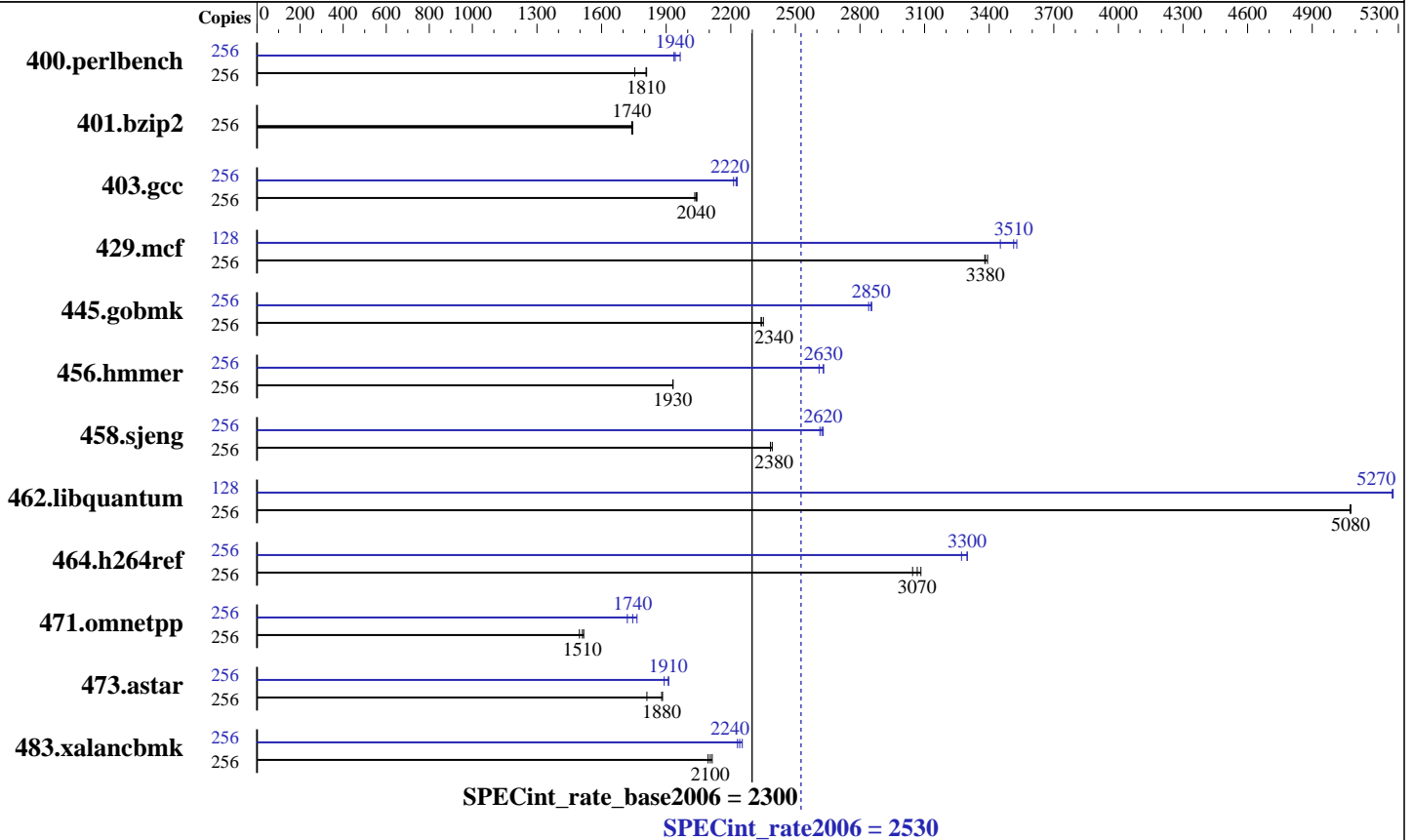
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2010

Hardware Availability: Mar-2010

Software Availability: Mar-2010



Hardware

CPU Name: POWER7
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 3.94 GHz
 CPU MHz: 3860
 FPU: Integrated
 CPU(s) enabled: 64 cores, 8 chips, 8 cores/chip, 4 threads/core
 CPU(s) orderable: 8,16,24,32,48,64 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: 4 MB I+D on chip per core
 Other Cache: None
 Memory: 512 GB (64x8 GB) DDR3 1066 MHz
 Disk Subsystem: 12x146.8 GB SAS SFF 15K RPM
 Other Hardware: None

Software

Operating System: IBM AIX V6.1 with the 6100-04 Technology Level and Service Pack 3
 Compiler: XL C/C++ Enterprise Edition V10.1.0.5 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	256	1382	1810	<u>1385</u>	<u>1810</u>	1426	1750	256	1273	1970	<u>1288</u>	<u>1940</u>	1292	1940
401.bzip2	256	1416	1740	1420	1740	<u>1419</u>	<u>1740</u>	256	1416	1740	1420	1740	<u>1419</u>	<u>1740</u>
403.gcc	256	<u>1011</u>	<u>2040</u>	1014	2030	1009	2040	256	924	2230	931	2210	<u>926</u>	<u>2220</u>
429.mcf	256	<u>690</u>	<u>3380</u>	688	3390	691	3380	128	338	3450	331	3530	<u>332</u>	<u>3510</u>
445.gobmk	256	1142	2350	1147	2340	<u>1147</u>	<u>2340</u>	256	945	2840	<u>942</u>	<u>2850</u>	941	2850
456.hammer	256	1237	1930	<u>1237</u>	<u>1930</u>	1236	1930	256	908	2630	915	2610	<u>908</u>	<u>2630</u>
458.sjeng	256	1299	2380	1295	2390	<u>1299</u>	<u>2380</u>	256	1185	2610	<u>1181</u>	<u>2620</u>	1178	2630
462.libquantum	256	1044	5080	1045	5080	<u>1044</u>	<u>5080</u>	128	503	5270	<u>503</u>	<u>5270</u>	503	5280
464.h264ref	256	1861	3040	1838	3080	<u>1848</u>	<u>3070</u>	256	1732	3270	<u>1718</u>	<u>3300</u>	1718	3300
471.omnetpp	256	1055	1520	1069	1500	<u>1059</u>	<u>1510</u>	256	<u>917</u>	<u>1740</u>	907	1760	930	1720
473.astar	256	<u>956</u>	<u>1880</u>	993	1810	954	1880	256	950	1890	940	1910	<u>941</u>	<u>1910</u>
483.xalancbmk	256	843	2090	836	2110	<u>839</u>	<u>2100</u>	256	792	2230	784	2250	<u>788</u>	<u>2240</u>

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

Peak Tuning Notes

```

fdpr binary optimization tool used for 400.perlbench
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 401.bzip2
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 403.gcc
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 429.mcf
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 445.gobmk
with options -O3 -vrox -sdp 9
fdpr binary optimization tool used for 456.hammer
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 458.sjeng
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 462.libquantum
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 464.h264ref
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 471.omnetpp
with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 473.astar
with options -O4 -vrox -pbsi

```



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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).

Operating System Notes

all ulimits set to unlimited.
25600 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"

See the flags file for details on settings.

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:

-bmaxdata:0x50000000 -O5 -qlargepage -D_ILS_MACROS -qalias=noansi
-qalloca -blpdata

C++ benchmarks:

-bmaxdata:0x20000000 -O5 -qlargepage -D_ILS_MACROS -qrtti=all
-D__IBM_FAST_SET_MAP_ITERATOR -blpdata



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Base Other Flags

C benchmarks:
-qipa=threads -qipa=noobject -qsuppress=1500-036
C++ benchmarks:
-qipa=threads -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) -O5
-D_ILS_MACROS -qalias=noansi -qfdpr -blpdata
-btextpsize:64K
401.bzip2: basepeak = yes
403.gcc: -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O4
-qlargepage -D_ILS_MACROS -qalloca -qfdpr -blpdata
429.mcf: -bmaxdata:0x50000000 -O5 -qlargepage -D_ILS_MACROS -qfdpr
-blpdata
445.gobmk: -qpdf1(pass 1) -qpdf2(pass 2) -O3 -qarch=auto -qtune=auto
-qlargepage -D_ILS_MACROS -qfdpr -blpdata
456.hmmer: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qenablevmx -qvecnv01
-D_ILS_MACROS -qfdpr -blpdata -btextpsize:64K

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Peak Optimization Flags (Continued)

458.sjeng: -O5 -qlargepage -qenablevmx -qvecnvml -D_ILS_MACROS
-qfdpr -blpdata

462.libquantum: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -q64
-D_ILS_MACROS -qfdpr -blpdata

464.h264ref: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -D_ILS_MACROS -qfdpr
-blpdata -btextpsize:64K

C++ benchmarks:

471.omnetpp: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -D_ILS_MACROS -qfdpr -qalign=natural
-qrtti=all -qinlglue -D__IBM_FAST_SET_MAP_ITERATOR
-blpdata -btextpsize:64K

473.astar: -bmaxdata:0x20000000 -O5 -qlargepage -D_ILS_MACROS -qfdpr
-qenablevmx -qvecnvml -qinlglue -qalign=natural -blpdata

483.xalancbmk: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -D_ILS_MACROS -qfdpr -qinlglue
-D__IBM_FAST_VECTOR -blpdata -btextpsize:64K

Peak Other Flags

C benchmarks:

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

C++ benchmarks:

-qipa=threads -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.20100303.html>

<http://www.spec.org/cpu2006/flags/IBM-AIX.20100303.html>

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

<http://www.spec.org/cpu2006/flags/IBM-XL.20100303.xml>

<http://www.spec.org/cpu2006/flags/IBM-AIX.20100303.xml>



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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 06:04:17 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2010.