



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 2140

IBM Power 770 (3.1 GHz, 64 core)

SPECint_rate_base2006 = 1930

CPU2006 license: 11

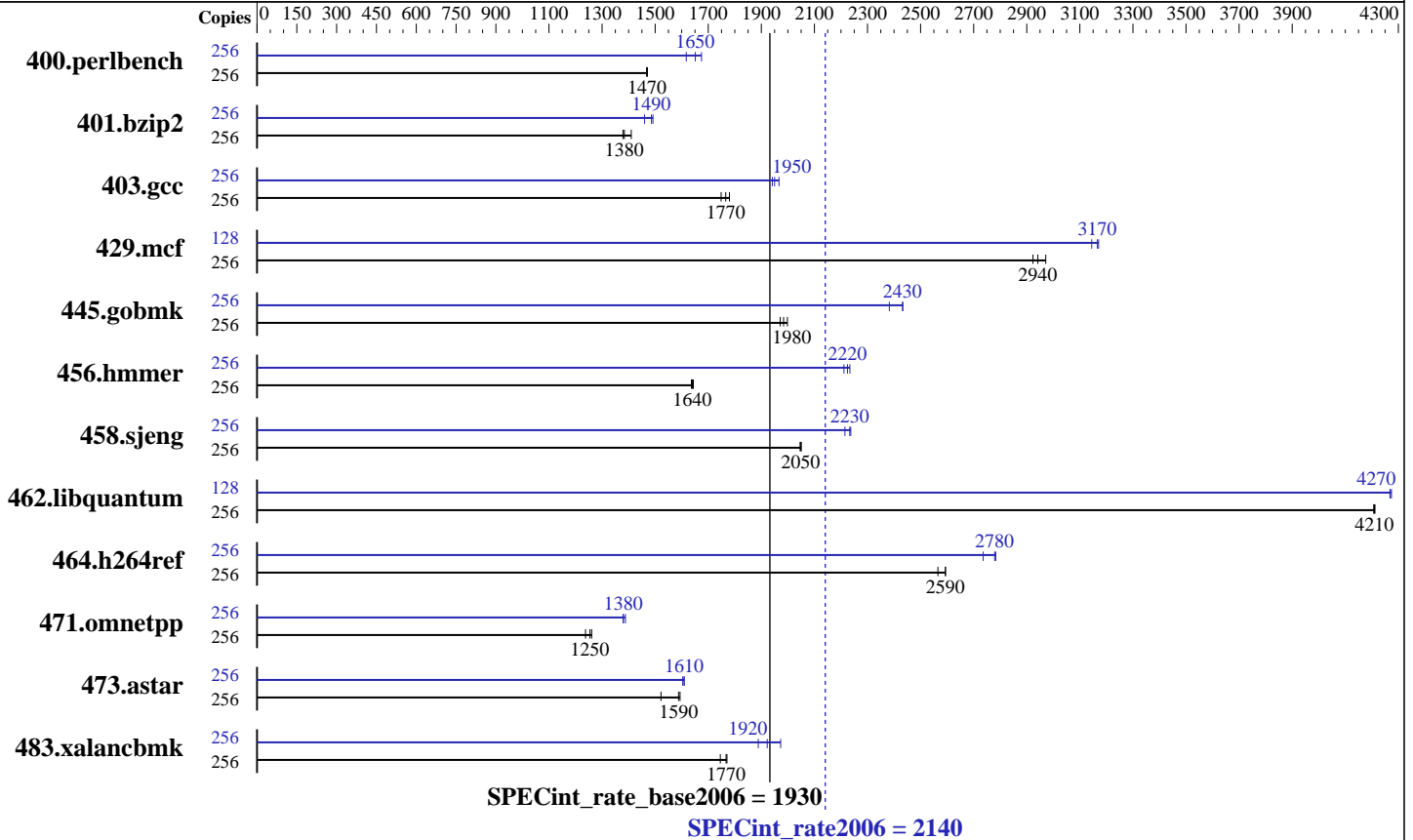
Test date: Jan-2010

Test sponsor: IBM Corporation

Hardware Availability: Mar-2010

Tested by: IBM Corporation

Software Availability: Mar-2010



Hardware

CPU Name: POWER7
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 3.41 GHz
 CPU MHz: 3100
 FPU: Integrated
 CPU(s) enabled: 64 cores, 8 chips, 8 cores/chip, 4 threads/core
 CPU(s) orderable: 12,16,24,32,36,48,64 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	1704	1470	1701	1470	<u>1702</u>	<u>1470</u>	256	1547	1620	1494	1670	<u>1515</u>	<u>1650</u>
401.bzip2	256	1792	1380	1752	1410	<u>1785</u>	<u>1380</u>	256	1692	1460	<u>1662</u>	<u>1490</u>	1656	1490
403.gcc	256	1158	1780	<u>1167</u>	<u>1770</u>	1179	1750	256	1048	1970	<u>1057</u>	<u>1950</u>	1062	1940
429.mcf	256	799	2920	<u>794</u>	<u>2940</u>	786	2970	128	<u>369</u>	<u>3170</u>	371	3140	368	3170
445.gobmk	256	1363	1970	<u>1354</u>	<u>1980</u>	1344	2000	256	1104	2430	<u>1104</u>	<u>2430</u>	1127	2380
456.hmmer	256	1453	1640	<u>1456</u>	<u>1640</u>	1460	1640	256	1069	2230	1080	2210	<u>1074</u>	<u>2220</u>
458.sjeng	256	1514	2050	<u>1512</u>	<u>2050</u>	1511	2050	256	<u>1387</u>	<u>2230</u>	1385	2240	1399	2210
462.libquantum	256	1259	4210	1261	4210	<u>1260</u>	<u>4210</u>	128	621	4270	621	4270	<u>621</u>	<u>4270</u>
464.h264ref	256	<u>2184</u>	<u>2590</u>	2208	2570	2184	2590	256	2071	2740	<u>2039</u>	<u>2780</u>	2035	2780
471.omnetpp	256	1269	1260	<u>1275</u>	<u>1250</u>	1293	1240	256	1153	1390	1160	1380	<u>1159</u>	<u>1380</u>
473.astar	256	<u>1132</u>	<u>1590</u>	1128	1590	1181	1520	256	<u>1117</u>	<u>1610</u>	1121	1600	1116	1610
483.xalancbmk	256	998	1770	<u>1000</u>	<u>1770</u>	1012	1750	256	895	1970	<u>919</u>	<u>1920</u>	935	1890

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.hmmer
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.bzp2: -bmaxdata:0x4ffffffc -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -D_ILS_MACROS -qfdpr -blpdata

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 06:01:07 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2010.