



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 289

IBM Power 710 Express (3.55 GHz, 8 core)

SPECint_rate_base2006 = 255

CPU2006 license: 11

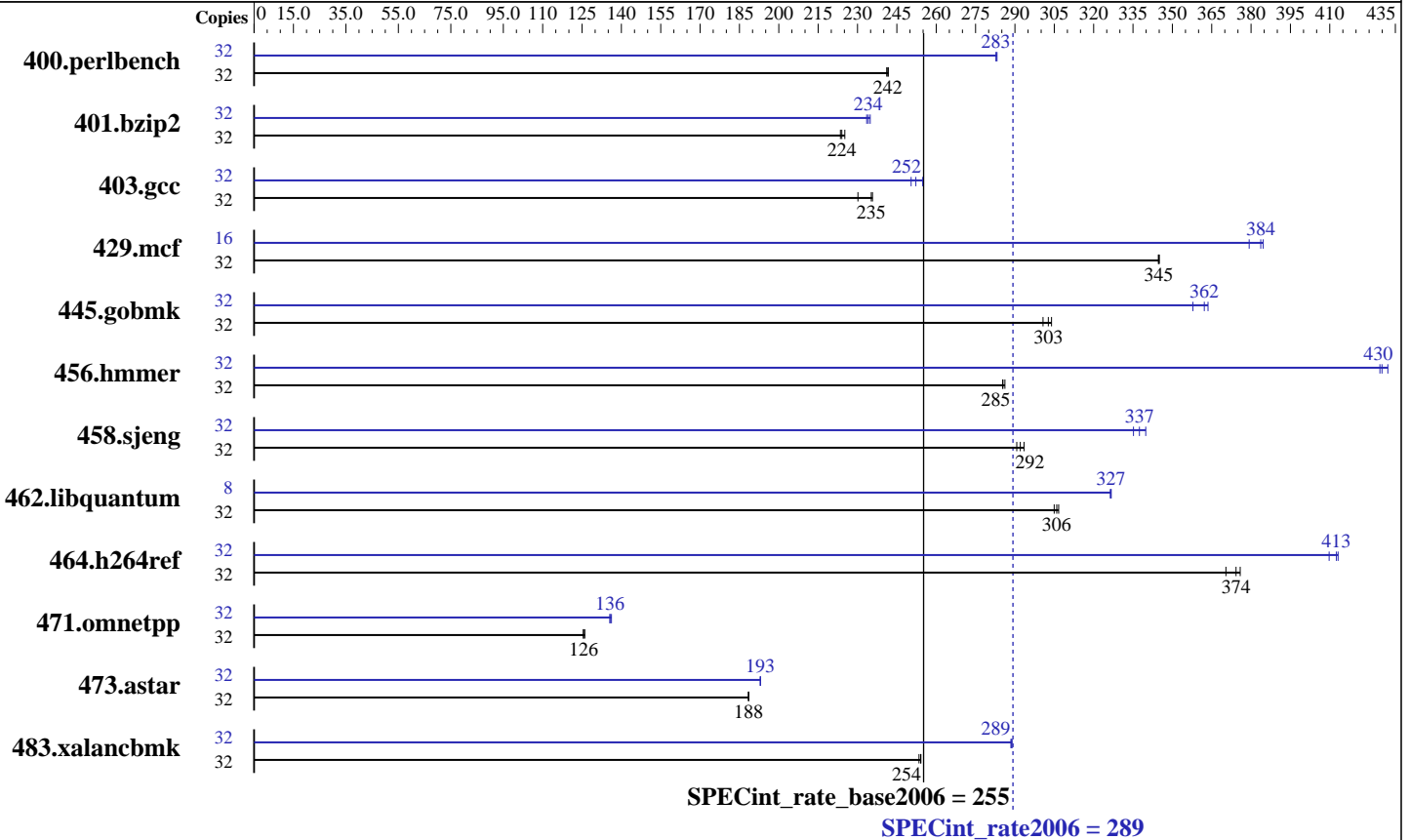
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Aug-2010

Hardware Availability: Sep-2010

Software Availability: Sep-2010



Hardware

CPU Name: POWER7
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 3.86 GHz
 CPU MHz: 3556
 FPU: Integrated
 CPU(s) enabled: 8 cores, 1 chip, 8 cores/chip, 4 threads/core
 CPU(s) orderable: 8 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: 64 GB (8x8 GB) DDR3 1066 MHz
 Disk Subsystem: 2x146.8 GB SAS SFF 15K RPM
 Other Hardware: None

Software

Operating System: IBM AIX V7.1
 Compiler: IBM XL C/C++ for AIX, V11.1
 Version: 11.01.0000.0002
 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	32	1297	241	1293	242	<u>1294</u>	<u>242</u>	32	1105	283	<u>1105</u>	<u>283</u>	1104	283
401.bzip2	32	<u>1379</u>	<u>224</u>	1382	223	1371	225	32	<u>1319</u>	<u>234</u>	1322	234	1315	235
403.gcc	32	<u>1095</u>	<u>235</u>	1093	236	1119	230	32	1011	255	1029	250	<u>1021</u>	<u>252</u>
429.mcf	32	<u>846</u>	<u>345</u>	846	345	847	345	16	<u>380</u>	<u>384</u>	379	385	385	379
445.gobmk	32	1116	301	<u>1109</u>	<u>303</u>	1104	304	32	938	358	<u>927</u>	<u>362</u>	923	364
456.hmmer	32	1046	285	<u>1046</u>	<u>285</u>	1043	286	32	<u>694</u>	<u>430</u>	691	432	696	429
458.sjeng	32	<u>1326</u>	<u>292</u>	1319	293	1332	291	32	<u>1147</u>	<u>337</u>	1139	340	1155	335
462.libquantum	32	2162	307	<u>2167</u>	<u>306</u>	2174	305	8	508	326	<u>507</u>	<u>327</u>	507	327
464.h264ref	32	1884	376	1912	370	<u>1892</u>	<u>374</u>	32	<u>1717</u>	<u>413</u>	1714	413	1728	410
471.omnetpp	32	1587	126	1594	125	<u>1593</u>	<u>126</u>	32	1475	136	1468	136	<u>1474</u>	<u>136</u>
473.astar	32	1191	189	<u>1192</u>	<u>188</u>	1192	188	32	<u>1164</u>	<u>193</u>	1164	193	1164	193
483.xalancbmk	32	<u>869</u>	<u>254</u>	869	254	871	253	32	765	288	<u>765</u>	<u>289</u>	764	289

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 401.bzip2
with options -O4 -sdp 9 -rtb -vrox -nodp -m power7
fdpr binary optimization tool used for:
  403.gcc 429.mcf 445.gobmk 458.sjeng
with options -O3 -m power7
fdpr binary optimization tool used for 456.hmmer
with options -O3 -lu -l -nodp -sdp 9 -m power7
fdpr binary optimization tool used for 462.libquantum
with options -O4 -nodp -m power7
fdpr binary optimization tool used for 471.omnetpp
with options -O4 -nodp -m power7 -vrox
fdpr binary optimization tool used for 473.astar
with options -O4 -sdp 9 -vrox -dp -m power7

```

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

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

```

MALLOCOPTIONS = "pool"
MEMORY_AFFINITY = "MCM"
XLFRTEOPTS = "intrinths=1"

```

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Operating System Notes (Continued)

All ulimits set to unlimited.
6400 16M large pages defined with vmo command
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:
-qipa=threads -bmaxdata:0x50000000 -O5 -qlargepage -qsimd -qvecnvml
-D_ILS_MACROS -qalias=noansi -qalloca -blpdata

C++ benchmarks:
-qipa=threads -bmaxdata:0x20000000 -O5 -qlargepage -D_ILS_MACROS
-qrtti=all -D__IBM_FAST_SET_MAP_ITERATOR -blpdata

Base Other Flags

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

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

Peak Compiler Invocation

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

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Peak Compiler Invocation (Continued)

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: -qipa=threads -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) -O5 -qsimd -qvecnvml -qlargepage
-D_ILS_MACROS -blpdata -btextpsize:64K
403.gcc: -qipa=threads -bmaxdata:0x50000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O3 -qarch=auto -qtune=auto -qlargepage
-D_ILS_MACROS -qalloca -blpdata -btextpsize:64K
429.mcf: Same as 401.bzip2
445.gobmk: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qsimd
-qvecnvml -qlargepage -D_ILS_MACROS -blpdata
-btextpsize:64K
456.hmmer: -qipa=threads -O5 -qsimd -qvecnvml -qassert=refalign
-D_ILS_MACROS -blpdata -btextpsize:64K
458.sjeng: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5
-D_ILS_MACROS -blpdata -btextpsize:64K
462.libquantum: -O5 -q64 -qlargepage -D_ILS_MACROS -blpdata
-btextpsize:64K
464.h264ref: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qsimd
-qvecnvml -D_ILS_MACROS -blpdata -btextpsize:64K

C++ benchmarks:

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Peak Optimization Flags (Continued)

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

483.xalancbmk: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1)
-qpdf2(pass 2) -O4 -qsimd -qvecnvoll -qarch=pwr5
-qtune=pwr5 -qlargepage -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

403.gcc: -qsuppress=1500-036

462.libquantum: -qsuppress=1500-036

C++ benchmarks (except as noted below):

-qipa=noobject -qsuppress=1500-036

471.omnetpp: -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.20100901.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.20100901.xml>

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



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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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