



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 1060

IBM Power 750 Express (3.55 GHz, 32 core)

SPECint_rate_base2006 = 949

CPU2006 license: 11

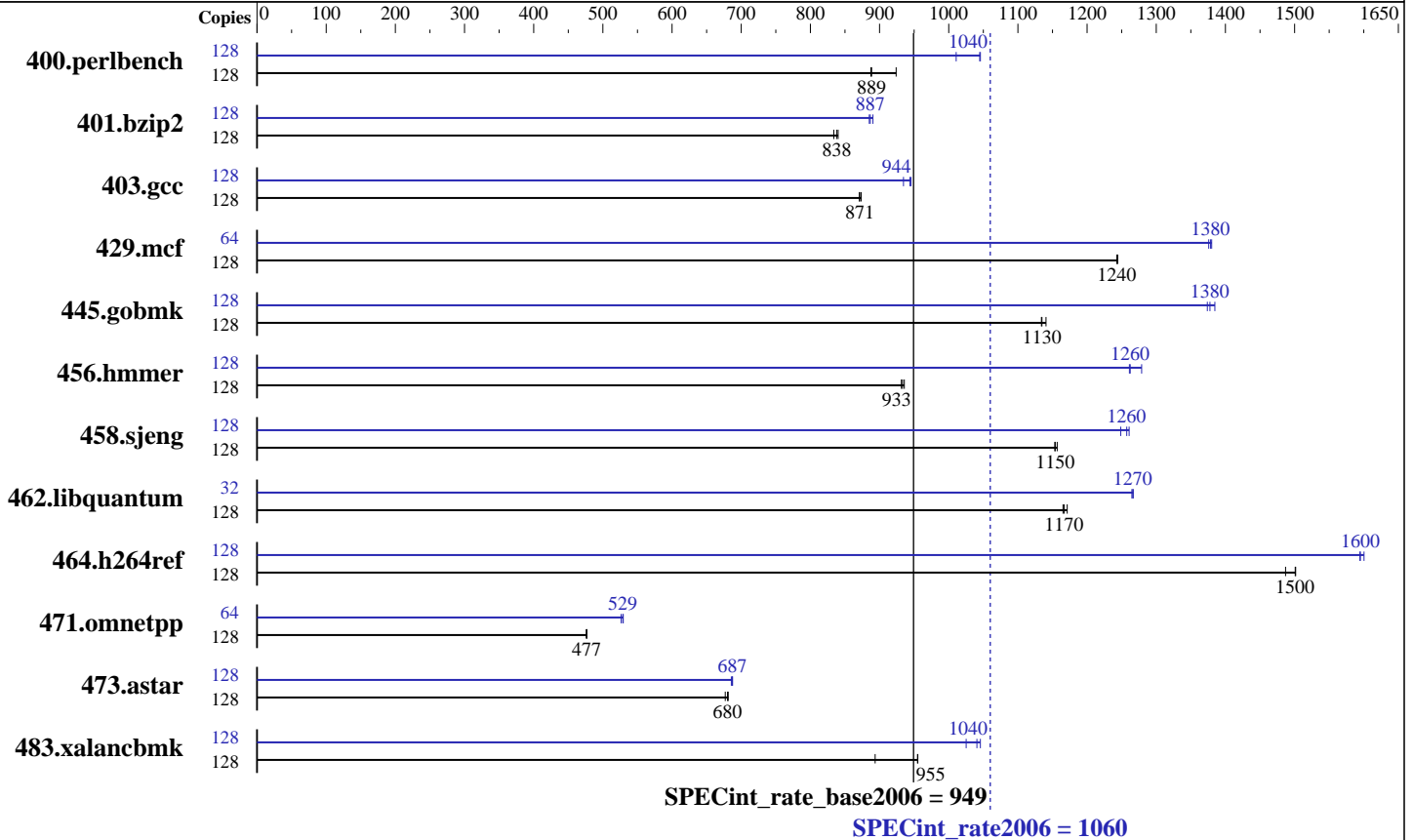
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2010

Hardware Availability: Feb-2010

Software Availability: Feb-2010



Hardware

CPU Name: POWER7
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 3.86 GHz
 CPU MHz: 3550
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 4 threads/core
 CPU(s) orderable: 8,16,24,32 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: 256 GB (32x8 GB) DDR3 1066 MHz
 Disk Subsystem: 8x146.8 GB SAS SFF 15K RPM
 Other Hardware: None

Software

Operating System: IBM AIX V6.1 with the 6100-04 Technology Level and Service Pack 2
 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	128	1353	924	1407	889	1409	887	128	1196	1050	1237	1010	1197	1040
401.bzip2	128	1474	838	1481	834	1470	840	128	1387	890	1396	885	1393	887
403.gcc	128	1180	873	1183	871	1183	871	128	1090	945	1092	944	1103	935
429.mcf	128	939	1240	938	1240	939	1240	64	423	1380	423	1380	424	1380
445.gobmk	128	1177	1140	1184	1130	1183	1130	128	975	1380	977	1370	970	1380
456.hammer	128	1276	936	1280	933	1282	932	128	946	1260	947	1260	934	1280
458.sjeng	128	1343	1150	1339	1160	1342	1150	128	1240	1250	1232	1260	1228	1260
462.libquantum	128	2264	1170	2273	1170	2276	1170	32	523	1270	524	1270	524	1260
464.h264ref	128	1905	1490	1887	1500	1887	1500	128	1770	1600	1777	1590	1776	1600
471.omnetpp	128	1677	477	1681	476	1678	477	64	756	529	760	526	756	529
473.astar	128	1319	681	1321	680	1327	677	128	1307	688	1308	687	1310	686
483.xalancbmk	128	925	955	924	955	988	894	128	845	1050	849	1040	861	1030

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.
12800 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.bz2: -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 -qvecnv1
-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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