SPEC® CINT2006 Result

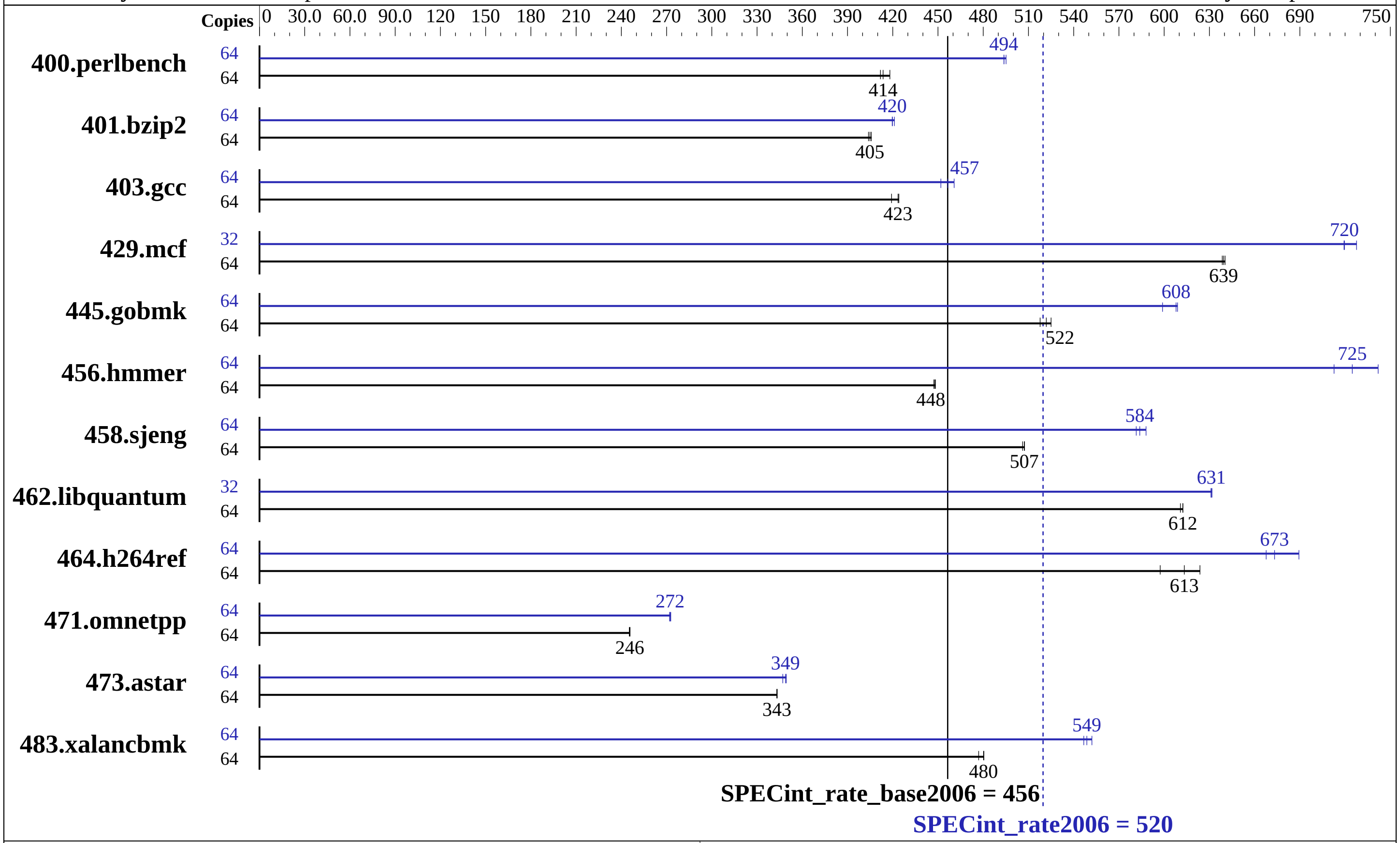
IBM Corporation

IBM BladeCenter PS702 Express (3.0 GHz, 16 core)

SPECint®_rate2006 = 520

SPECint_rate_base2006 = 456

CPU2006 license:	11	**Test date:**	Mar-2010
Test sponsor:	IBM Corporation	**Hardware Availability:**	Jun-2010
Tested by:	IBM Corporation	**Software Availability:**	Apr-2010



Hardware	
CPU Name:	POWER7
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 3.30 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 4 threads/core
CPU(s) orderable:	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:	4 MB I+D on chip per core
Other Cache:	None
Memory:	128 GB (32x4 GB) DDR3 1066 MHz
Disk Subsystem:	1x300 GB SAS SFF 10K RPM
Other Hardware:	None

Software	
Operating System:	IBM AIX V6.1 with the 6100-05 Technology Level SP1
Compiler:	IBM XL C/C++ for AIX, V11.1.0.1
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	**1512**	**414**	1496	418	1518	412	64	**1266**	**494**	1266	494	1263	495
401.bzip2	64	**1525**	**405**	1529	404	1522	406	64	1472	420	**1471**	**420**	1467	421
403.gcc	64	**1217**	**423**	1215	424	1229	419	64	1140	452	1118	461	**1129**	**457**
429.mcf	64	**913**	**639**	914	639	911	640	32	**406**	**720**	401	728	406	719
445.gobmk	64	1297	518	1279	525	**1287**	**522**	64	**1104**	**608**	1103	609	1121	599
456.hmmer	64	1332	448	**1333**	**448**	1335	447	64	**824**	**725**	805	742	838	713
458.sjeng	64	**1527**	**507**	1530	506	1526	507	64	1317	588	**1326**	**584**	1332	581
462.libquantum	64	2171	611	**2166**	**612**	2165	612	32	1051	631	**1050**	**631**	1050	632
464.h264ref	64	2271	624	**2309**	**613**	2371	597	64	**2104**	**673**	2121	668	2054	689
471.omnetpp	64	1631	245	1628	246	**1629**	**246**	64	**1469**	**272**	1466	273	1471	272
473.astar	64	**1309**	**343**	1309	343	1308	343	64	1286	349	1294	347	**1288**	**349**
483.xalancbmk	64	926	477	**920**	**480**	919	480	64	**805**	**549**	800	552	808	547

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 401.bzip2 462.libquantum
 with options -O4 -vrox -nodp -m power7
fdpr binary optimization tool used for 403.gcc
 with options -O4 -nodp -rtb -m power7
fdpr binary optimization tool used for:
 429.mcf 445.gobmk 458.sjeng
 with options -O3 -m power7
fdpr binary optimization tool used for:
 456.hmmer 473.astar
 with options -O4 -nodp -m power7
fdpr binary optimization tool used for 464.h264ref
 with options -O4 -vrox -nodp -rtb -m power7
fdpr binary optimization tool used for:
 471.omnetpp 483.xalancbmk
 with options -O3 -lu -1 -nodp -sdp 9 -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).
```

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Operating System Notes

```
Environment variables set by runspec before the start of the run:
MALLOCOPTIONS = "pool"
MEMORY_AFFINITY = "MCM"
XLFRTEOPTS = "intrinthds=1"
all ulimits set to unlimited.
4096 16M large pages defined with vmo command
```

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`

Base Other Flags

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

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

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Peak Compiler Invocation

C benchmarks:
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C++ benchmarks:
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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: `-bmaxdata:0x4ffffffc -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -blpdata`

403.gcc: `-bmaxdata:0x50000000 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qsimd -qvecnvol -qlargepage -D_ILS_MACROS -qalloca -blpdata`

429.mcf: `-bmaxdata:0x50000000 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qsimd -qvecnvol -qlargepage -D_ILS_MACROS -blpdata`

445.gobmk: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qsimd -qvecnvol -qlargepage -D_ILS_MACROS -blpdata`

456.hmmer: `-O5 -qsimd -qvecnvol -qassert=refalign -D_ILS_MACROS -blpdata -btextpsize:64K`

458.sjeng: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -D_ILS_MACROS -blpdata`

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

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

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -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: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -qinlglue -qalign=natural -blpdata

483.xalancbmk: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qarch=pwr5 -qtune=pwr5 -qlargepage -D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR -blpdata -btextpsize:64K

Peak Other Flags

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

C++ benchmarks (except as noted below):
-qipa=threads -qipa=noobject -qsuppress=1500-036

471.omnetpp: -qipa=threads -qsuppress=1500-036

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/IBM-AIX.20100303.html
http://www.spec.org/cpu2006/flags/IBM-XL.20100427.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/IBM-AIX.20100303.xml
http://www.spec.org/cpu2006/flags/IBM-XL.20100427.xml

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