SPEC® CINT2006 Result

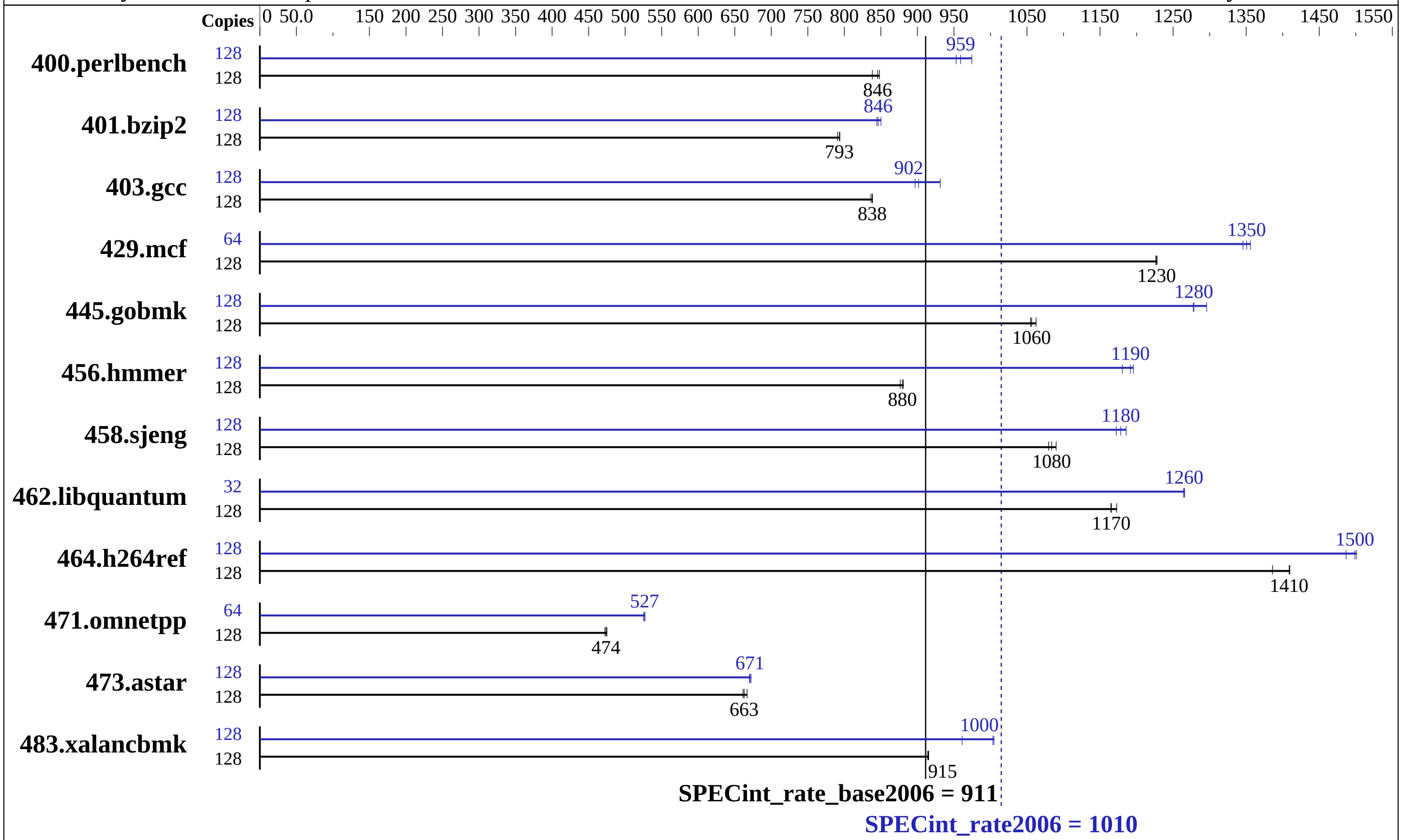
IBM Corporation

IBM Power 755 (3.3 GHz, 32 core)

SPECint®_rate2006 = 1010

SPECint_rate_base2006 = 911

CPU2006 license:	11	**Test date:**	Jan-2010
Test sponsor:	IBM Corporation	**Hardware Availability:**	Feb-2010
Tested by:	IBM Corporation	**Software Availability:**	Feb-2010



Hardware

CPU Name:	POWER7
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 3.64 GHz
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 4 threads/core
CPU(s) orderable:	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

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	128	**1479**	**846**	1492	838	1475	848	128	**1304**	**959**	1283	975	1312	953
401.bzip2	128	1556	794	1562	791	**1557**	**793**	128	1453	850	**1459**	**846**	1462	845
403.gcc	128	1229	839	1232	836	**1229**	**838**	128	1106	931	1149	897	**1143**	**902**
429.mcf	128	952	1230	**951**	**1230**	951	1230	64	431	1360	434	1350	**432**	**1350**
445.gobmk	128	**1271**	**1060**	1264	1060	1273	1050	128	1036	1300	1051	1280	**1050**	**1280**
456.hmmer	128	**1358**	**880**	1356	881	1363	876	128	999	1200	**1002**	**1190**	1012	1180
458.sjeng	128	1434	1080	**1429**	**1080**	1421	1090	128	**1314**	**1180**	1306	1190	1321	1170
462.libquantum	128	**2276**	**1170**	2261	1170	2277	1160	32	524	1270	524	1260	**524**	**1260**
464.h264ref	128	2009	1410	**2011**	**1410**	2044	1390	128	1905	1490	**1890**	**1500**	1887	1500
471.omnetpp	128	**1688**	**474**	1684	475	1694	472	64	759	527	762	525	**760**	**527**
473.astar	128	**1355**	**663**	1359	661	1347	667	128	**1339**	**671**	1341	670	1336	672
483.xalancbmk	128	**965**	**915**	965	915	966	914	128	879	1000	**880**	**1000**	919	961

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
```

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.
 The "IBM Power 750 Express (3.3 GHz)" and "IBM Power 755 (3.3 GHz)"
 are electronically equivalent. The results have been measured on the
 "IBM Power 755 (3.3 GHz)"
```

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`

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: `-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 -qvecnvol -D_ILS_MACROS -qfdpr -blpdata -btextpsize:64K`

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Peak Optimization Flags (Continued)

458.sjeng: -O5 -qlargepage -qenablevmx -qvecnvol -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 -qvecnvol -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

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

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