



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 1010

IBM Power 755 (3.3 GHz, 32 core)

SPECint_rate_base2006 = 911

CPU2006 license: 11

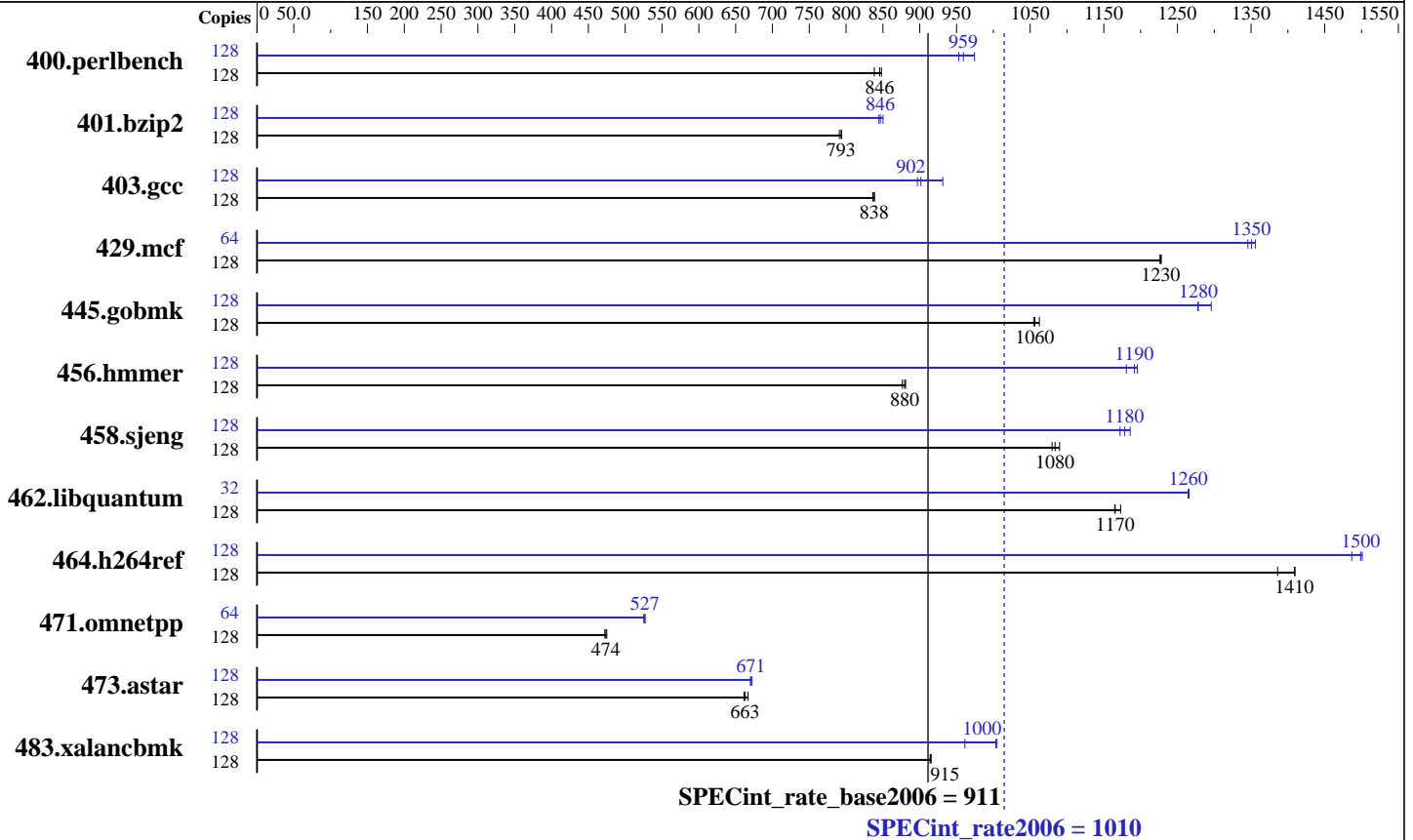
Test sponsor: IBM Corporation

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 3.64 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



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



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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.

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