SPEC® CINT2006 Result

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IBM Corporation

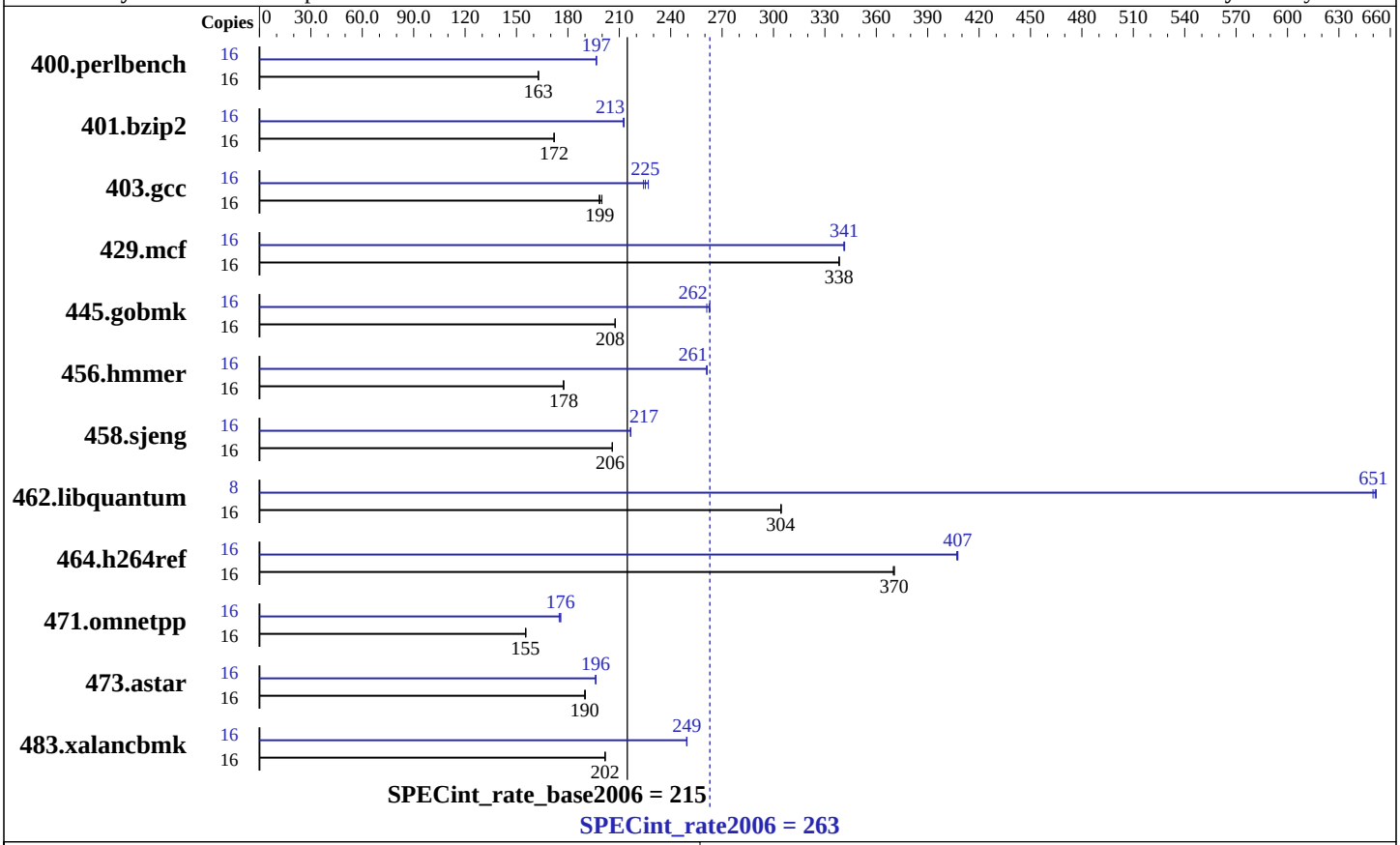
IBM Power 550 (5.0 GHz, 8 core)

SPECint®_rate2006 = 263

SPECint_rate_base2006 = 215

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Apr-2009
Hardware Availability: May-2009
Software Availability: May-2009



Hardware

CPU Name:	POWER6+
CPU Characteristics:	
CPU MHz:	5000
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	2,4,6,8 cores
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per core
L3 Cache:	32 MB I+D off chip per chip
Other Cache:	None
Memory:	128 GB (32x4 GB) DDR2 667 MHz
Disk Subsystem:	2x146 GB SAS 15K RPM
Other Hardware:	None

Software

Operating System:	IBM AIX V6.1 with the 6100-03 Technology Level
Compiler:	XL C/C++ Enterprise Edition V10.1.0.2 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	16	961	163	960	163	**960**	**163**	16	795	197	**795**	**197**	795	197
401.bzip2	16	897	172	898	172	**898**	**172**	16	726	213	**727**	**213**	727	212
403.gcc	16	**648**	**199**	644	200	650	198	16	575	224	**572**	**225**	567	227
429.mcf	16	**431**	**338**	431	338	431	338	16	428	341	427	342	**428**	**341**
445.gobmk	16	808	208	**809**	**208**	809	208	16	643	261	639	263	**640**	**262**
456.hmmer	16	842	177	841	178	**841**	**178**	16	**572**	**261**	572	261	572	261
458.sjeng	16	**940**	**206**	940	206	940	206	16	894	217	**894**	**217**	893	217
462.libquantum	16	1088	305	**1090**	**304**	1090	304	8	**255**	**651**	254	652	255	650
464.h264ref	16	**956**	**370**	956	370	957	370	16	**869**	**407**	870	407	869	408
471.omnetpp	16	643	156	**644**	**155**	644	155	16	572	175	**569**	**176**	569	176
473.astar	16	592	190	**591**	**190**	591	190	16	572	196	573	196	**572**	**196**
483.xalancbmk	16	547	202	547	202	**547**	**202**	16	442	250	**443**	**249**	443	249

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 403.gcc 456.hmmer 458.sjeng 464.h264ref
471.omnetpp 473.astar 483.xalancbmk
 with options -O4 -vrox -pbsi
fdpr binary optimization tool used for 429.mcf
 with options -kr -lap -lro -nop -nopr -RC -tb -tlo
 -vro -lu 9 -rt 0.95 -sdpla 8 -sdpms 512 -shci 15 -si
 -sidf 45 -siht 10 -lun 13 -m ppc405 -vrox -gcpyp
fdpr binary optimization tool used for 445.gobmk
 with options -O3 -vrox -sdp 9
fdpr binary optimization tool used for 462.libquantum
 with options -bf -bp -dp -hr -kr -las -lro -nop -RC
 -RD -tlo -vro -A 32 -isf 12 -lu 9 -rt 0.00 -ihf 20
 -sdp 9 -shci 90 -si -sidf 50 -vrox -dce
```

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.
2000 16M large pages defined with vmo command
```

Platform Notes

```
System set to "Enhanced" mode when defining partition on HMC.
```

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
```

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 -bdatapsize:64K
-bstackpsize:64K -btextpsize:64K

401.bzip2: -bmaxdata:0x4fffffc -qpdf1(pass 1) -qpdf2(pass 2) -O4
-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 -bdatapsize:64K -bstackpsize:64K
-btextpsize:64K

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
-bdatapsize:64K -bstackpsize:64K -btextpsize:64K

Continued on next page

Peak Optimization Flags (Continued)

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.html
http://www.spec.org/cpu2006/flags/IBM-AIX.html

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

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 23:55:02 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 May 2009.