SPEC® CINT2006 Result

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IBM Corporation

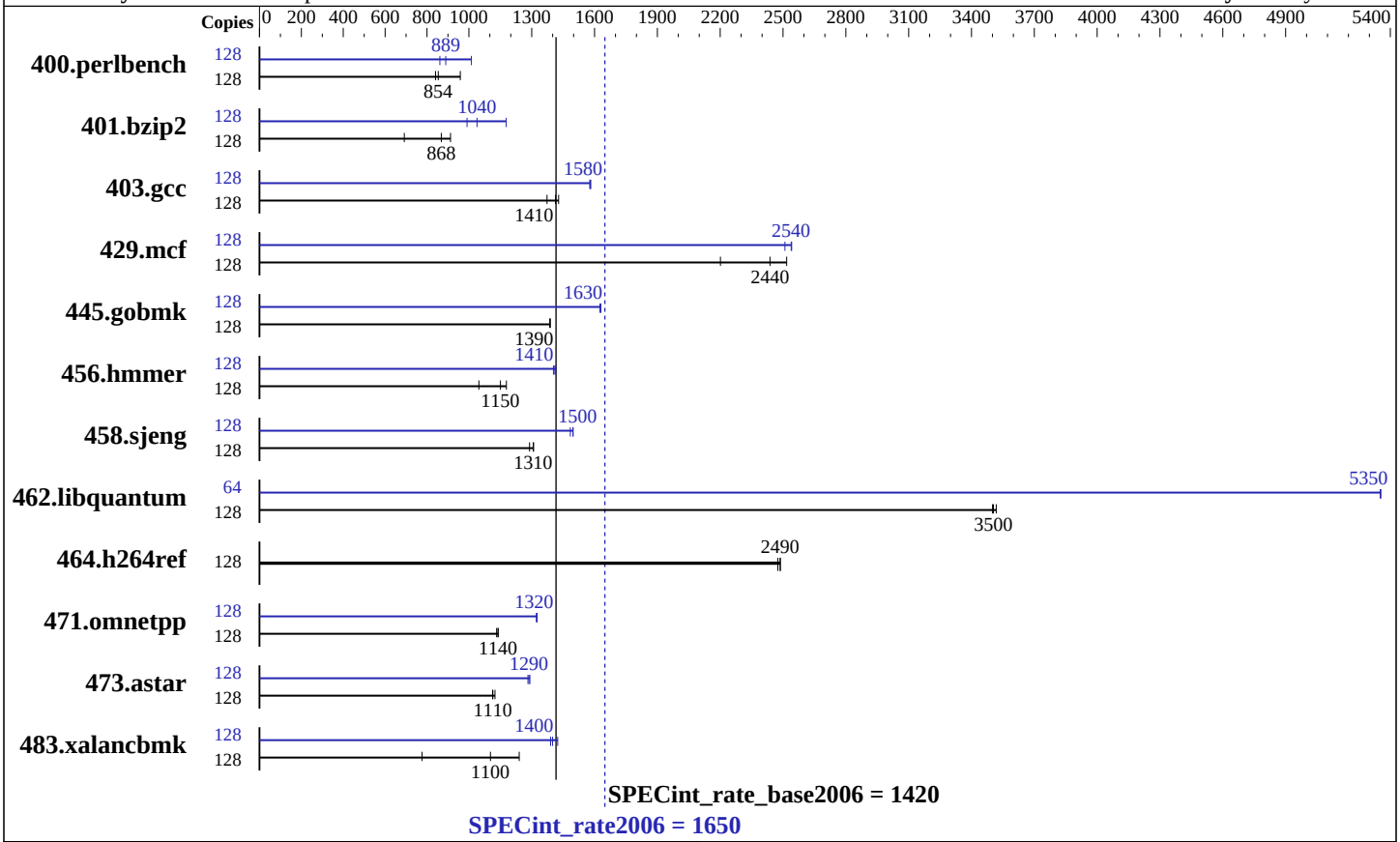
IBM Power 595 (4.2 GHz, 64 core)

SPECint®_rate2006 = 1650

SPECint_rate_base2006 = 1420

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

Test date: Mar-2008
Hardware Availability: Jun-2008
Software Availability: May-2008



Hardware

CPU Name:	POWER6
CPU Characteristics:	
CPU MHz:	4200
FPU:	Integrated
CPU(s) enabled:	64 cores, 32 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	8,16,24,32,40,48,56,64 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:	512 GB (256x2 GB - 256 GB) DDR2 667 MHz
Disk Subsystem:	4x146 GB SCSI 15K RPM
Other Hardware:	None

Software

Operating System:	IBM AIX V6.1 with the 6100-01 Technology Level
Compiler:	XL C/C++ Enterprise Edition V9 for AIX Updated with the Oct2007 PTF.
Auto Parallel:	No
File System:	AIX/JFS2
System State:	Multi-user
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	--

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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	1487	841	1304	959	**1465**	**854**	128	1236	1010	**1406**	**889**	1452	861
401.bzip2	128	1354	912	1786	692	**1423**	**868**	128	1048	1180	1246	991	**1189**	**1040**
403.gcc	128	721	1430	750	1370	**729**	**1410**	128	652	1580	653	1580	**652**	**1580**
429.mcf	128	464	2520	530	2200	**479**	**2440**	128	459	2540	465	2510	**460**	**2540**
445.gobmk	128	968	1390	**968**	**1390**	967	1390	128	**824**	**1630**	824	1630	826	1630
456.hmmer	128	1013	1180	1140	1050	**1038**	**1150**	128	**847**	**1410**	851	1400	844	1410
458.sjeng	128	1183	1310	**1185**	**1310**	1201	1290	128	1034	1500	**1035**	**1500**	1043	1480
462.libquantum	128	**757**	**3500**	758	3500	754	3520	64	**248**	**5350**	248	5350	248	5350
464.h264ref	128	1144	2480	**1139**	**2490**	1139	2490	128	1144	2480	**1139**	**2490**	1139	2490
471.omnetpp	128	706	1130	702	1140	**702**	**1140**	128	605	1320	**604**	**1320**	603	1330
473.astar	128	799	1120	807	1110	**807**	**1110**	128	696	1290	**698**	**1290**	701	1280
483.xalancbmk	128	712	1240	**801**	**1100**	1138	776	128	620	1420	**631**	**1400**	635	1390

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
See flags file of details on following settings.
all ulimits set to unlimited.
Envionment variables set before executing benchmarks:
  MALLOCOPTIONS=pool
  MEMORY_AFFINITY=MCM
  XLFRTEOPTS=intrinthds=1
System set to "Enhanced" mode when defining partition on HMC.
bindprocessor command used on submit to bind each copy to a
  unique processor.
12000 16M large pages defined with vmo command
Remote console disabled in /etc/inittab.
fdpr binary optimization tool used for:
  400.perlbench 401.bzip2 403.gcc 429.mcf 456.hmmer
  458.sjent 462.libquantum 464.h264ref 473.astar
```

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 -blpdata

Base Other Flags

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

C++ benchmarks:
-qipa=noobject -qipa=threads -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
403.gcc: -DSPEC_CPU_LP64
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) `-O4 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -qalias=noansi -qfdpr -blpdata`

401.bzip2: `-bmaxdata:0x4fffffc -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -qfdpr -blpdata`

403.gcc: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qlargepage -D_ILS_MACROS -qalloca -qfdpr -q64 -blpdata`

429.mcf: `-bmaxdata:0x50000000 -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -qfdpr -blpdata`

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

456.hmmer: `-O5 -qlargepage -D_ILS_MACROS -qfdpr -blpdata`

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

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

464.h264ref: `basepeak = yes`

C++ benchmarks:

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

473.astar: `-bmaxdata:0x20000000 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qfdpr -qinlglue -qalign=natural -blpdata`

483.xalancbmk: `-bmaxdata:0x20000000 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR -blpdata`

Peak Other Flags

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

Continued on next page

Peak Other Flags (Continued)

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

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/IBM-AIX-XL.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/IBM-AIX-XL.20090714.xml

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