SPEC® CINT2006 Result

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IBM Corporation

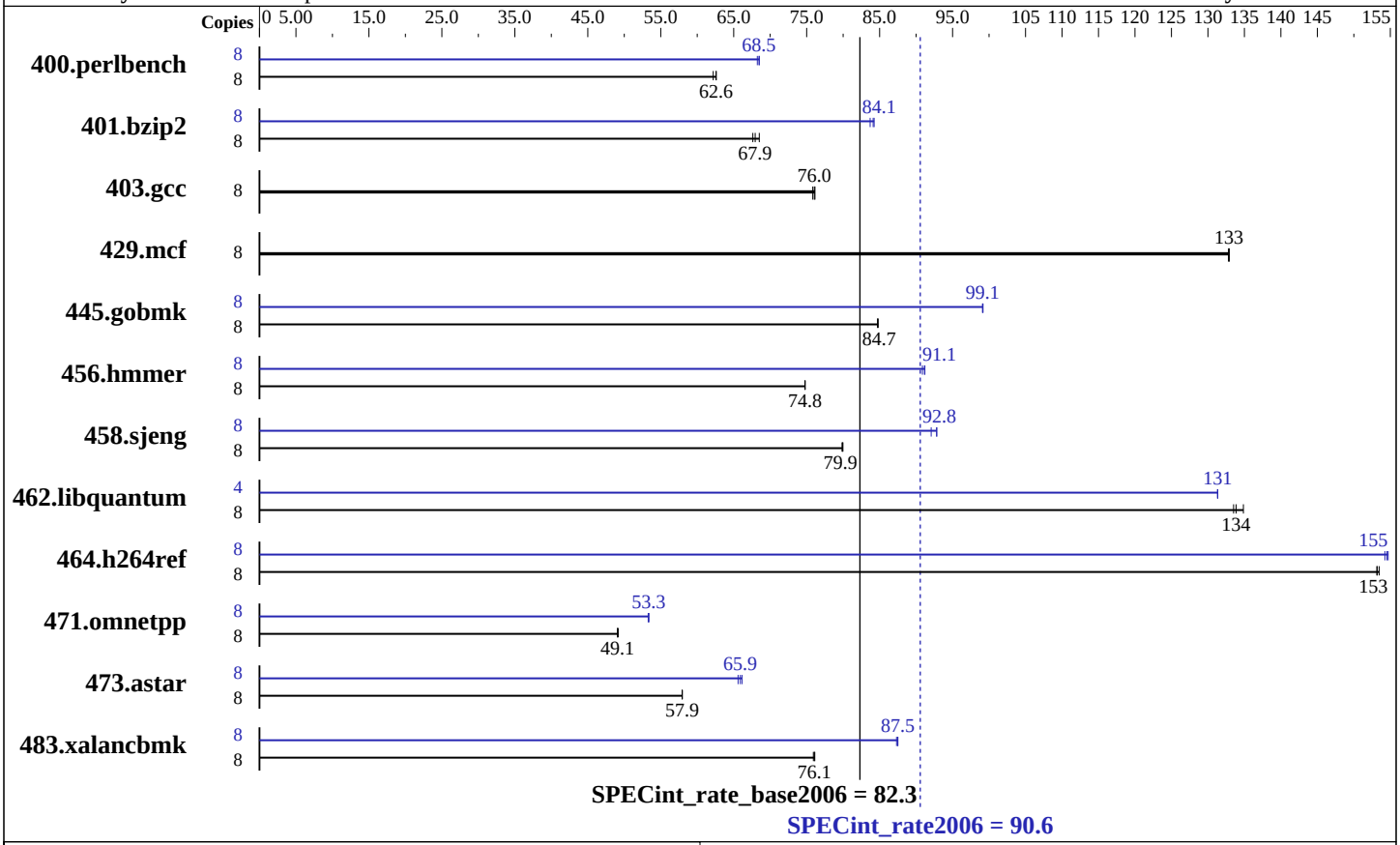
IBM System p 520 (4.2 GHz, 4 core)

SPECint®_rate2006 = 90.6

SPECint_rate_base2006 = 82.3

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

Test date: Jan-2008
Hardware Availability: Feb-2008
Software Availability: Feb-2008



Hardware

CPU Name:	POWER6
CPU Characteristics:	
CPU MHz:	4200
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,4 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:	None
Other Cache:	None
Memory:	32 GB (8x4 GB) DDR2 667 MHz
Disk Subsystem:	1x73 GB 1x146 GB SAS 15K RPM
Other Hardware:	None

Software

Operating System:	IBM AIX V6.1 Updated to SP3
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	8	1257	62.2	**1249**	**62.6**	1249	62.6	8	1145	68.2	**1142**	**68.5**	1141	68.5
401.bzip2	8	1142	67.6	1127	68.5	**1136**	**67.9**	8	916	84.2	922	83.7	**918**	**84.1**
403.gcc	8	849	75.8	846	76.1	**847**	**76.0**	8	849	75.8	846	76.1	**847**	**76.0**
429.mcf	8	549	133	549	133	**549**	**133**	8	549	133	549	133	**549**	**133**
445.gobmk	8	990	84.8	990	84.7	**990**	**84.7**	8	847	99.1	**847**	**99.1**	846	99.2
456.hmmer	8	998	74.8	**998**	**74.8**	998	74.8	8	821	90.9	**819**	**91.1**	818	91.2
458.sjeng	8	1211	80.0	**1211**	**79.9**	1212	79.8	8	1051	92.1	1043	92.8	**1043**	**92.8**
462.libquantum	8	**1238**	**134**	1241	134	1229	135	4	**631**	**131**	631	131	631	131
464.h264ref	8	**1156**	**153**	1154	153	1156	153	8	1148	154	**1146**	**155**	1144	155
471.omnetpp	8	**1019**	**49.1**	1019	49.1	1017	49.2	8	938	53.3	937	53.4	**937**	**53.3**
473.astar	8	**969**	**57.9**	969	57.9	969	58.0	8	856	65.6	**852**	**65.9**	849	66.1
483.xalancbmk	8	727	75.9	725	76.1	**726**	**76.1**	8	632	87.3	**631**	**87.5**	631	87.5

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.
1000 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
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: basepeak = yes

429.mcf: basepeak = yes

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: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -q64 -D_ILS_MACROS -qenablevmx -qvecnvol -qfdpr -bdatapsize:64K -bstackpsize:64K -btextpsize:64K

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/CPU2006_flags.20090714.05.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.05.xml

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