SPEC® CINT2006 Result

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IBM Corporation

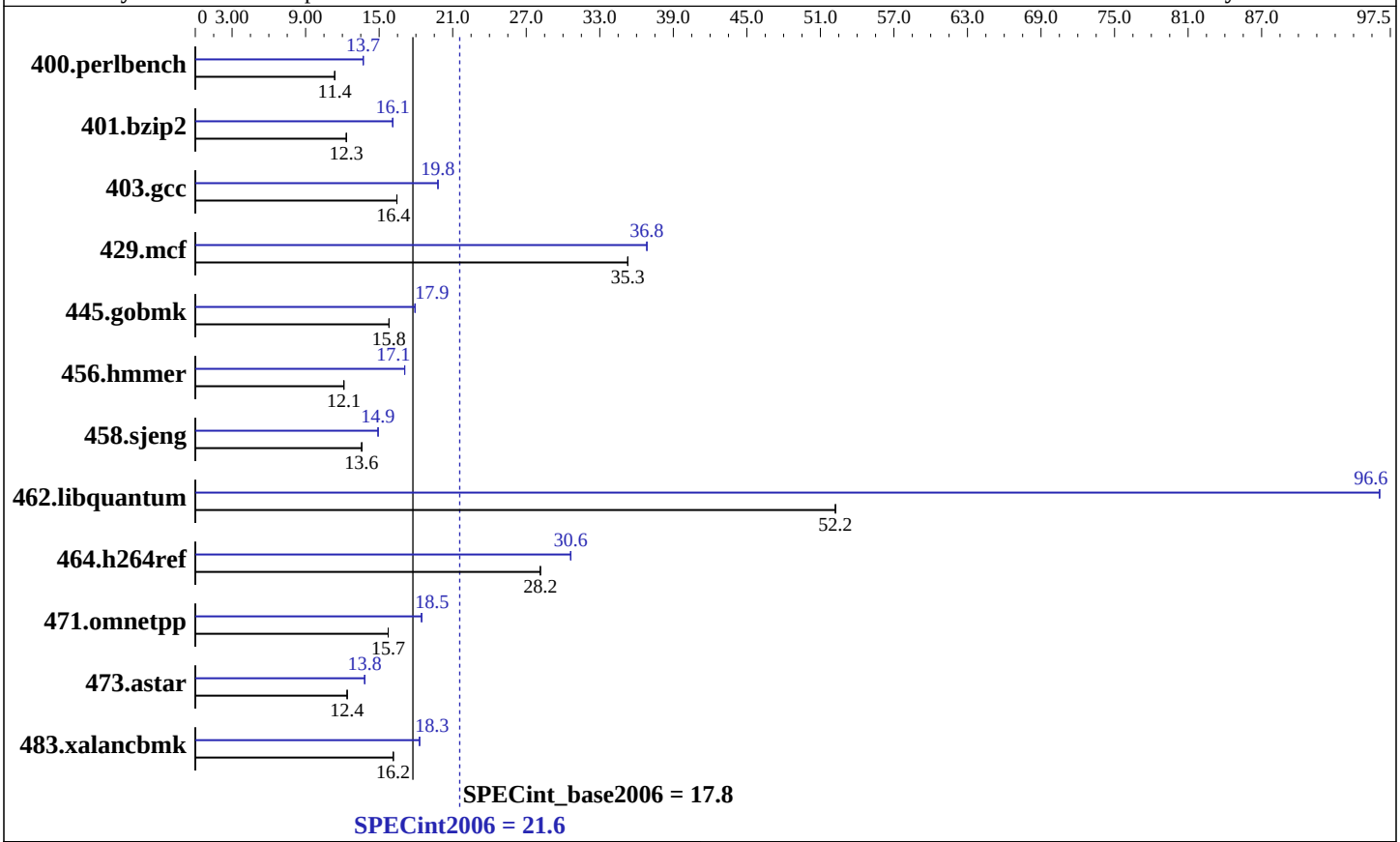
IBM System i 570 (4.7 GHz, 1 core)

SPECint®2006 = 21.6

SPECint_base2006 = 17.8

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

Test date: May-2007
Hardware Availability: Sep-2007
Software Availability: Jun-2007



Hardware

CPU Name:	POWER6
CPU Characteristics:	
CPU MHz:	4700
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 2 cores/chip
CPU(s) orderable:	4,8,12,16 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:	16 GB (8x2 GB) DDR2 667 MHz
Disk Subsystem:	1x73 GB 1x146 GB SAS 15K RPM
Other Hardware:	None

Software

Operating System:	IBM AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 9.0 for AIX
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**859**	**11.4**	859	11.4	858	11.4	**713**	**13.7**	713	13.7	712	13.7
401.bzip2	**783**	**12.3**	783	12.3	783	12.3	599	16.1	**599**	**16.1**	599	16.1
403.gcc	490	16.4	**489**	**16.4**	489	16.5	407	19.8	407	19.8	**407**	**19.8**
429.mcf	**258**	**35.3**	258	35.3	258	35.3	248	36.8	247	36.9	**248**	**36.8**
445.gobmk	**664**	**15.8**	664	15.8	664	15.8	585	17.9	**585**	**17.9**	585	17.9
456.hmmer	770	12.1	**770**	**12.1**	770	12.1	546	17.1	546	17.1	**546**	**17.1**
458.sjeng	891	13.6	**891**	**13.6**	891	13.6	**811**	**14.9**	811	14.9	811	14.9
462.libquantum	**397**	**52.2**	397	52.2	397	52.2	214	96.6	214	96.6	**214**	**96.6**
464.h264ref	786	28.1	**786**	**28.2**	786	28.2	722	30.6	**723**	**30.6**	723	30.6
471.omnetpp	**397**	**15.7**	397	15.7	397	15.7	338	18.5	**339**	**18.5**	339	18.5
473.astar	567	12.4	566	12.4	**567**	**12.4**	508	13.8	508	13.8	**508**	**13.8**
483.xalancbmk	427	16.2	427	16.2	**427**	**16.2**	**377**	**18.3**	377	18.3	377	18.3

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

General Notes

```
AIX 5L V5.3 updated with the 5300-06 Technology Level.
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
Speed run on 1 core partition defined on HMC,
768 16M pages defined on systems with vmo command
fdpr binary optimization tool used for
  401.bzip2 403.gcc 429.mcf 456.hmmer 462.libquantum 473.astar
submit used to bind benchmark to a processor using "bindprocessor"
The "IBM System p 570" and "IBM System i 570" are electronicly equivalent.
The results have been measured on the "IBM System p 570" model.
```

Base Compiler Invocation

C benchmarks:

```
/usr/vac/bin/xlc
```

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:
-O5 -qlargepage -D_ILS_MACROS -qalloca -blpdata

C++ benchmarks:
-O5 -qlargepage -D_ILS_MACROS -qrtti=all -blpdata

Base Other Flags

C benchmarks:
-qlanglvl=extc99 -bmaxdata:0x50000000 -qalias=noansi -qipa=noobject
-qipa=threads -qsuppress=1500-036

C++ benchmarks:
-bmaxdata:0x20000000 -qipa=noobject -qipa=threads -qsuppress=1500-036

Peak Compiler Invocation

C benchmarks:
/usr/vac/bin/xlc

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

401.bzip2: `Same as 400.perlbench`

403.gcc: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qalloca -q64 -blpdata`

429.mcf: `-O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata`

445.gobmk: `Same as 400.perlbench`

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

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

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

464.h264ref: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -blpdata`

C++ benchmarks:

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

473.astar: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata`

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

Peak Other Flags

C benchmarks (except as noted below):
`-qlanglvl=extc99 -qipa=noobject -qipa=threads -qsuppress=1500-036`

400.perlbench: `-qlanglvl=extc99 -bmaxdata:0x50000000 -qalias=noansi -qipa=noobject -qipa=threads -qsuppress=1500-036`

401.bzip2: `-qlanglvl=extc99 -bmaxdata:0x4ffffffc -qipa=noobject -qipa=threads -qsuppress=1500-036`

Continued on next page

Peak Other Flags (Continued)

429.mcf: `-qlanglvl=extc99 -bmaxdata:0x50000000 -qipa=noobject -qipa=threads -qsuppress=1500-036`

C++ benchmarks:
`-bmaxdata:0x20000000 -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.20090714.12.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.12.xml`

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