SPEC® CINT2006 Result

IBM Corporation

SPECint®_rate2006 =   122

IBM System i 570 (4.7 GHz, 4 core)

SPECint_rate_base2006 =   106

CPU2006 license: 11

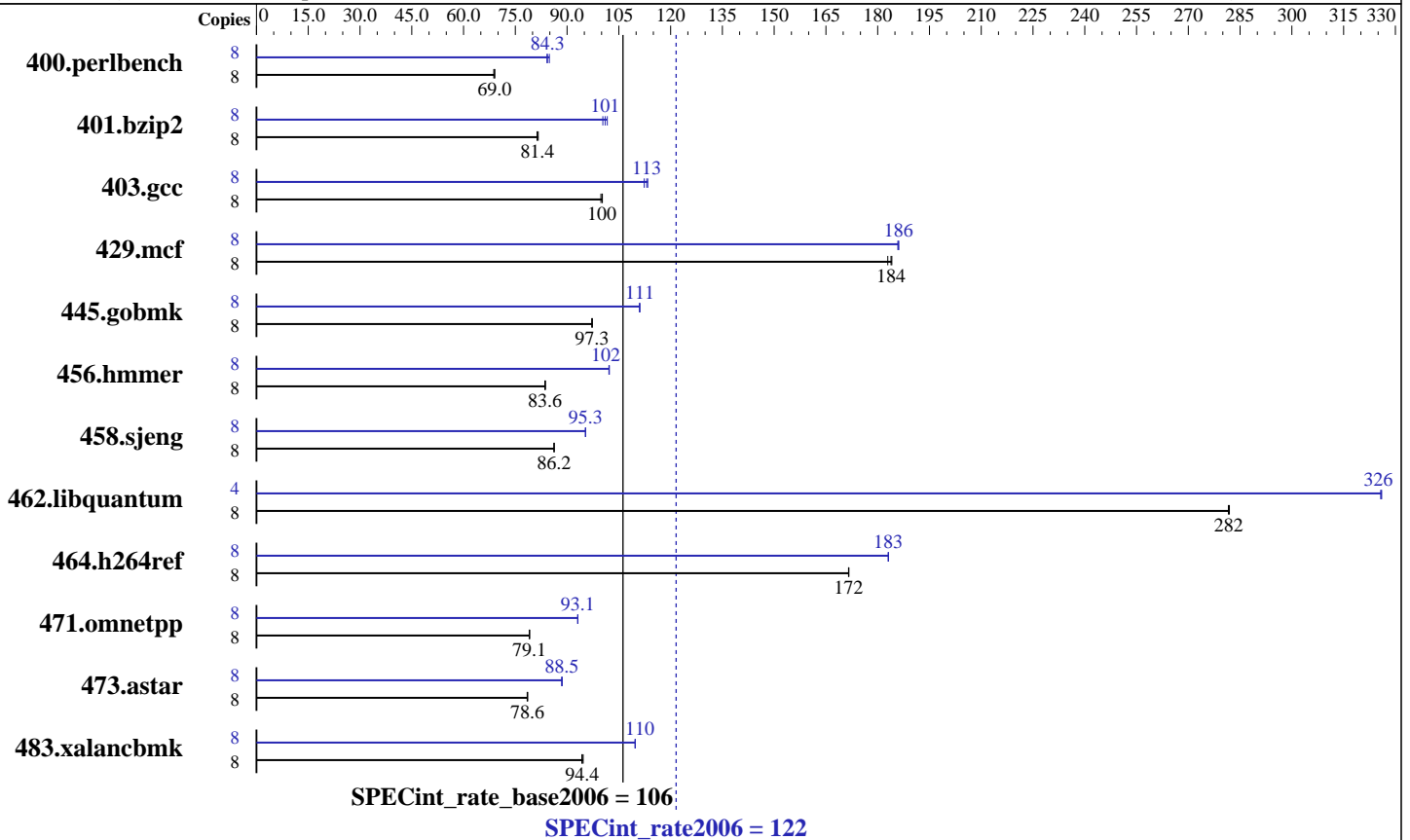**Test sponsor:** IBM Corporation

Tested by: IBM Corporation

Test date: May-2007

Hardware Availability: Sep-2007

Software Availability: Jun-2007

Benchmark	Copies	Peak	Base
400.perlbench	8 / 8	84.3	69.0
401.bzip2	8 / 8	101	81.4
403.gcc	8 / 8	113	100
429.mcf	8 / 8	186	184
445.gobmk	8 / 8	111	97.3
456.hmmer	8 / 8	102	83.6
458.sjeng	8 / 8	95.3	86.2
462.libquantum	4 / 8	326	282
464.h264ref	8 / 8	183	172
471.omnetpp	8 / 8	93.1	79.1
473.astar	8 / 8	88.5	78.6
483.xalancbmk	8 / 8	110	94.4

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Hardware

CPU Name: POWER6

CPU Characteristics:

CPU MHz: 4700

FPU: Integrated

CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip, 2 threads/core

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: 32 GB (16x2 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	1137	68.8	**1133**	**69.0**	1132	69.0	8	**927**	**84.3**	929	84.2	921	84.9
401.bzip2	8	946	81.6	950	81.3	**948**	**81.4**	8	769	100	**764**	**101**	759	102
403.gcc	8	643	100	**643**	**100**	645	99.8	8	**570**	**113**	573	112	568	113
429.mcf	8	399	183	**397**	**184**	396	184	8	392	186	393	186	**392**	**186**
445.gobmk	8	**863**	**97.3**	862	97.3	864	97.2	8	756	111	**756**	**111**	756	111
456.hmmer	8	893	83.6	891	83.7	**893**	**83.6**	8	731	102	730	102	**731**	**102**
458.sjeng	8	**1123**	**86.2**	1123	86.2	1122	86.3	8	1015	95.3	1015	95.3	**1015**	**95.3**
462.libquantum	8	588	282	**588**	**282**	589	282	4	**254**	**326**	254	326	254	326
464.h264ref	8	1032	172	**1032**	**172**	1031	172	8	**967**	**183**	967	183	967	183
471.omnetpp	8	633	79.0	**632**	**79.1**	632	79.1	8	537	93.1	**537**	**93.1**	537	93.1
473.astar	8	**715**	**78.6**	716	78.4	715	78.6	8	**635**	**88.5**	634	88.6	635	88.4
483.xalancbmk	8	**585**	**94.4**	585	94.3	583	94.7	8	503	110	503	110	**503**	**110**

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
    Envioment variables set before executing benchmarks:
      MALLOCOPTIONS=pool
      MEMORY_AFFINITY=MCM
      XLFRTEOPTS=intrinthds=1
    System set to "Enhanced" mode when defining partition on HMC
    1536 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 electroniclly 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

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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
```

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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

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

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