SPEC® CINT2006 Result

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IBM Corporation

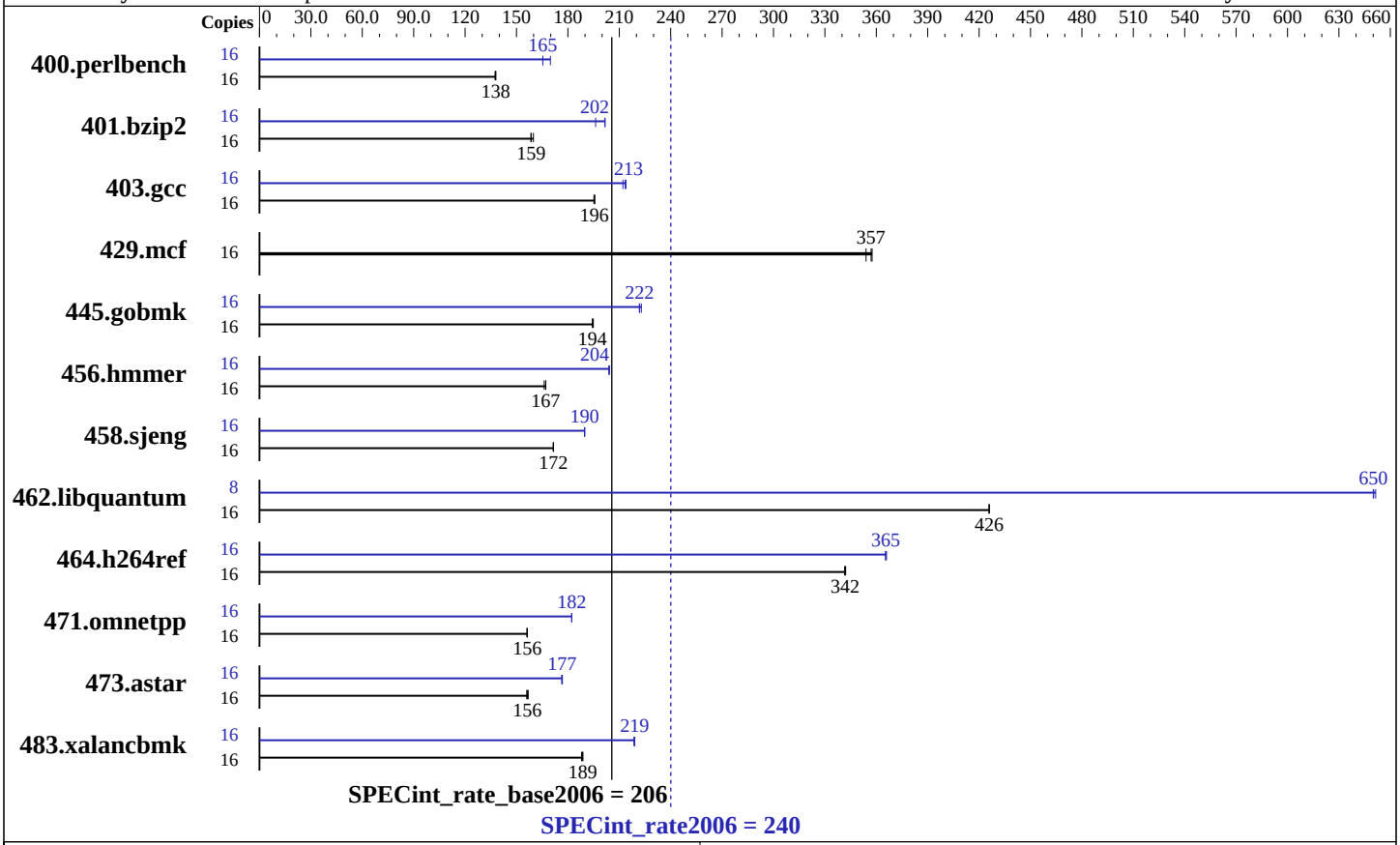
IBM System i 570 (4.7 GHz, 8 core)

SPECint®_rate2006 = 240

SPECint_rate_base2006 = 206

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:	8 cores, 4 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:	64 GB (32x2 GB) DDR2 667 MHz
Disk Subsystem:	2x73 GB 2x146 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	16	**1134**	**138**	1137	137	1134	138	16	**945**	**165**	945	165	921	170
401.bzip2	16	974	158	**974**	**159**	966	160	16	787	196	766	202	**766**	**202**
403.gcc	16	658	196	**659**	**196**	660	195	16	**603**	**213**	607	212	602	214
429.mcf	16	412	354	**409**	**357**	408	358	16	412	354	**409**	**357**	408	358
445.gobmk	16	864	194	861	195	**863**	**194**	16	753	223	757	222	**756**	**222**
456.hmmer	16	898	166	**894**	**167**	893	167	16	732	204	**731**	**204**	731	204
458.sjeng	16	**1129**	**172**	1129	171	1128	172	16	1021	190	**1020**	**190**	1020	190
462.libquantum	16	778	426	**778**	**426**	779	426	8	**255**	**650**	254	651	255	650
464.h264ref	16	1037	342	**1036**	**342**	1035	342	16	969	365	968	366	**969**	**365**
471.omnetpp	16	640	156	**640**	**156**	641	156	16	549	182	**549**	**182**	549	182
473.astar	16	**718**	**156**	720	156	716	157	16	**636**	**177**	637	176	635	177
483.xalancbmk	16	587	188	585	189	**585**	**189**	16	505	219	**504**	**219**	504	219

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
3072 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: `basepeak = yes`

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 -qalias=noansi -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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