SPEC® CINT2006 Result

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IBM Corporation

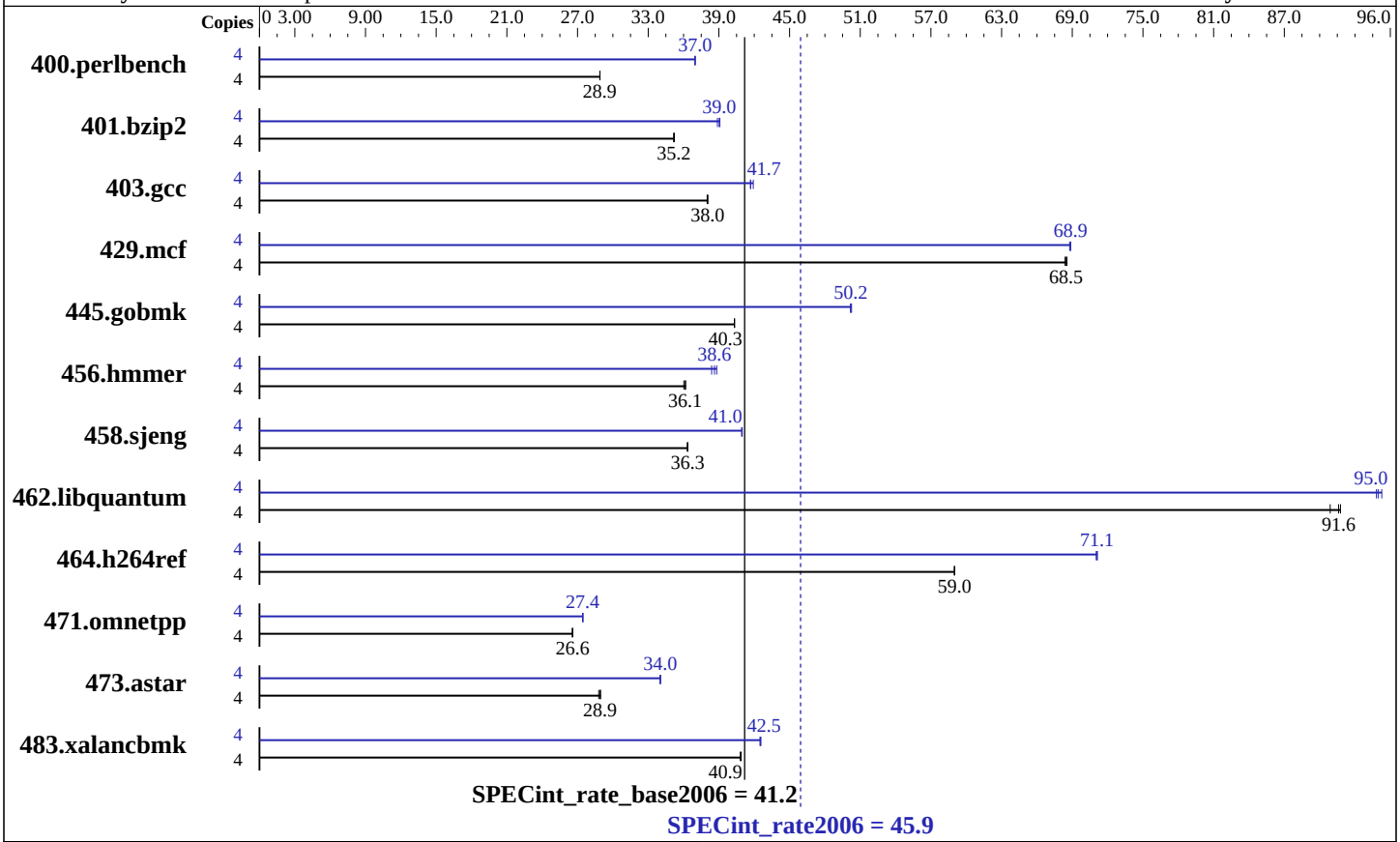
IBM BladeCenter JS12 Express (3.8 GHz, 2 core, RedHat)

SPECint®_rate2006 = 45.9

SPECint_rate_base2006 = 41.2

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

Test date: Feb-2008
Hardware Availability: May-2008
Software Availability: Nov-2007



Hardware

CPU Name:	POWER6
CPU Characteristics:	
CPU MHz:	3800
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU(s) orderable:	2 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 SAS 15K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Advanced Platform 5.1 for IBM POWER
Compiler:	IBM XL C/C++ Advanced Edition for Linux, V9.0
Auto Parallel:	No
File System:	ext3
System State:	Multi-User
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	-IBM Post-Link Optimization for Linux on POWER, Version 5.4.0-17 -MicroQuill SmartHeap 8.1

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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	4	1352	28.9	**1352**	**28.9**	1352	28.9	4	1057	37.0	**1057**	**37.0**	1057	37.0
401.bzip2	4	1098	35.2	**1097**	**35.2**	1096	35.2	4	**989**	**39.0**	993	38.9	988	39.1
403.gcc	4	846	38.1	847	38.0	**846**	**38.0**	4	768	41.9	773	41.7	**772**	**41.7**
429.mcf	4	**533**	**68.5**	532	68.5	533	68.4	4	530	68.8	**530**	**68.9**	530	68.9
445.gobmk	4	1041	40.3	**1041**	**40.3**	1040	40.3	4	835	50.3	**836**	**50.2**	836	50.2
456.hmmer	4	1032	36.2	1036	36.0	**1032**	**36.1**	4	972	38.4	961	38.8	**966**	**38.6**
458.sjeng	4	**1332**	**36.3**	1333	36.3	1331	36.4	4	**1182**	**41.0**	1181	41.0	1182	40.9
462.libquantum	4	**905**	**91.6**	912	90.9	903	91.8	4	**873**	**95.0**	870	95.3	874	94.8
464.h264ref	4	1500	59.0	**1500**	**59.0**	1501	59.0	4	**1245**	**71.1**	1246	71.0	1245	71.1
471.omnetpp	4	940	26.6	**940**	**26.6**	942	26.6	4	911	27.4	911	27.5	**911**	**27.4**
473.astar	4	975	28.8	**971**	**28.9**	970	29.0	4	**825**	**34.0**	825	34.1	826	34.0
483.xalancbmk	4	676	40.8	**675**	**40.9**	675	40.9	4	649	42.5	648	42.6	**649**	**42.5**

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

General Notes

```
kernel release 2.6.18-53.el5.

See flags file for details on following settings.

ulimit -s (stack) set to 262144.



Large pages reserved as follows by root user:
    echo 265 > /proc/sys/vm/nr_hugepages
System configured with libhugetlbfs library for application access to large pages
Environment variables set before executing benchmarks.
    export HUGETLB_VERBOSE=0
    export HUGETLB_MORECORE=yes
    export XLFRTEOPTS=intrinthds=1

IBM Post-Link Optimization tool used for
    400.perlbench 401.bzip2 403.gcc 429.mcf 445.gobmk 456.hmmer 458.sjeng
    462.libquantum 464.h264ref 473.astar 483.xalancbmk

Benchmarks bound to a processor using numactl on the submit command.
```

Base Compiler Invocation

C benchmarks:

```
xlc -qlanglvl=extc99
```

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
xlC

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_PPC
462.libquantum: -DSPEC_CPU_LINUX
464.h264ref: -qchars=signed
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-O5 -qalias=noansi -qalloca -lhugetlbfs

C++ benchmarks:
-O5 -qrtti -lsmartheap

Base Other Flags

C benchmarks:
-qipa=noobject -qipa=threads

C++ benchmarks:
-qipa=noobject -qipa=threads

Peak Compiler Invocation

C benchmarks:
xlc -qlanglvl=extc99

C++ benchmarks:
xlC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_PPC
403.gcc: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page

Peak Portability Flags (Continued)

464.h264ref: `-qchars=signed`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qalias=noansi -lsmartheap`

401.bzip2: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -lhugetlbfs`

403.gcc: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qalloca -q64 -lhugetlbfs`

429.mcf: `-Wl,-q -O5 -qnoenablevmx -lhugetlbfs`

445.gobmk: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qnoenablevmx -lhugetlbfs`

456.hmmer: `Same as 401.bzip2`

458.sjeng: `Same as 401.bzip2`

462.libquantum: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qnoenablevmx -q64 -lhugetlbfs`

464.h264ref: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -q64 -lhugetlbfs`

C++ benchmarks:

471.omnetpp: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qrtti -lsmartheap`

473.astar: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qnoenablevmx -lsmartheap`

483.xalancbmk: `-Wl,-q -O4 -lsmartheap`

Peak Other Flags

C benchmarks:
`-qipa=noobject -qipa=threads`

C++ benchmarks:
`-qipa=noobject -qipa=threads`

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

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

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