



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

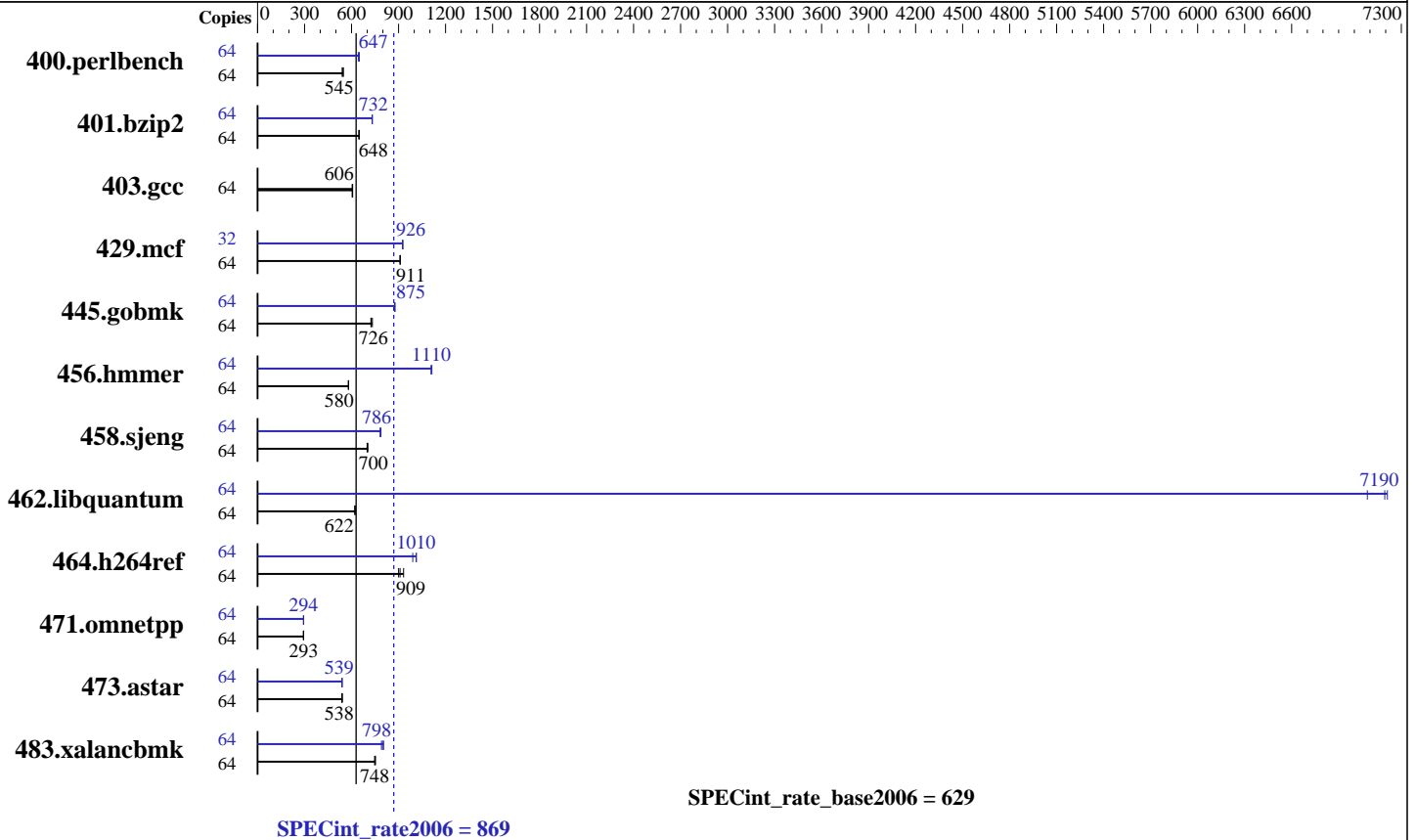
SPECint®_rate2006 = 869

IBM Power 740 Express (4.2 GHz, 16 core, SLES)

SPECint_rate_base2006 = 629

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

Test date: Jan-2013
Hardware Availability: Feb-2013
Software Availability: Dec-2012



Hardware

CPU Name: POWER7+
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 4.540 GHz
 CPU MHz: 4228
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 4 threads/core
 CPU(s) orderable: 8, 16 cores
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 10 MB I+D on chip per core
 Other Cache: None
 Memory: 128 GB (32 x 4 GB) DDR3 1066 MHz
 Disk Subsystem: 5 x 146.8 GB Raid0 SAS SFF 15K RPM
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (ppc64) kernel 3.0.42-0.7-ppc64
 Compiler: C/C++: Version 12.1 of IBM XL C/C++ for Linux
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: -Post-Link Optimization for Linux on POWER, version 5.6.1-7
 -MicroQuill SmartHeap 9



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECint_rate2006 = 869

IBM Power 740 Express (4.2 GHz, 16 core, SLES)

SPECint_rate_base2006 = 629

CPU2006 license: 11

Test date: Jan-2013

Test sponsor: IBM Corporation

Hardware Availability: Feb-2013

Tested by: IBM Corporation

Software Availability: Dec-2012

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	1158	540	1147	545	1142	548	64	973	643	966	647	963	649
401.bzip2	64	953	648	954	647	952	648	64	843	732	844	732	844	732
403.gcc	64	854	604	850	606	849	607	64	854	604	850	606	849	607
429.mcf	64	641	911	640	912	642	909	32	315	925	315	928	315	926
445.gobmk	64	916	733	925	726	928	723	64	768	874	765	878	768	875
456.hammer	64	1029	580	1029	580	1029	580	64	539	1110	538	1110	537	1110
458.sjeng	64	1107	699	1099	704	1107	700	64	986	786	983	788	990	782
462.libquantum	64	2130	623	2136	621	2132	622	64	184	7210	187	7080	184	7190
464.h264ref	64	1519	932	1557	909	1573	900	64	1398	1010	1398	1010	1430	991
471.omnetpp	64	1365	293	1364	293	1364	293	64	1362	294	1362	294	1365	293
473.astar	64	830	542	836	538	834	538	64	832	540	834	539	834	539
483.xalancbmk	64	587	753	590	748	590	748	64	549	805	553	798	558	791

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

Compiler Invocation Notes

C/C++ compiler updated to December 2012 PTF
Version: 12.01.0000.0002

Peak Tuning Notes

Post-Link optimization tool used for:

400.perlbench
with options -O4 -omullX for optimization phase,
and -imullX for instrumentation phase

401.bzip2
with options -O4 -vrox

403.gcc
with options -O4 -nodp -rtb

429.mcf 445.gobmk 458.sjeng 473.astar
with options -O3

462.libquantum
with options -O4 -vrox -nodp

464.h264ref
with options -O4 -vrox -nodp -rtb

471.omnetpp
with options -O3 -lu -l -nodp -sdp 9

483.xalancbmk
with options -O3 -m power7



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECint_rate2006 = 869

IBM Power 740 Express (4.2 GHz, 16 core, SLES)

SPECint_rate_base2006 = 629

CPU2006 license: 11

Test date: Jan-2013

Test sponsor: IBM Corporation

Hardware Availability: Feb-2013

Tested by: IBM Corporation

Software Availability: Dec-2012

Submit Notes

The config file option 'submit' was used to assign benchmark copy to specific kernel thread using the "numactl" command (see flags file for details).

Operating System Notes

ulimit -s (stack) set to 1048576.

Large pages reserved as follows by root user:
echo 4224 > /proc/sys/vm/nr_hugepages

The following environment variables were set before the runspec command:
export HUGETLB_VERBOSE=0
export HUGETLB_MORECORE=yes

Base Compiler Invocation

C benchmarks:
xlc -qlanglvl=extc99

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 -qarch=pwr7 -qtune=pwr7 -q32 -qipa=threads -qalias=noansi
-qalloca -lhugetlbfs

C++ benchmarks:
-O5 -qarch=pwr7 -qtune=pwr7 -q32 -qipa=threads -qrtti -lsmartheap

Base Other Flags

C benchmarks:

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECint_rate2006 = 869

IBM Power 740 Express (4.2 GHz, 16 core, SLES)

SPECint_rate_base2006 = 629

CPU2006 license: 11

Test date: Jan-2013

Test sponsor: IBM Corporation

Hardware Availability: Feb-2013

Tested by: IBM Corporation

Software Availability: Dec-2012

Base Other Flags (Continued)

C++ benchmarks:

Peak Compiler Invocation

C benchmarks:

xlc -qlanglvl=extc99

C++ benchmarks:

x1C

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_PPC
462.libquantum: -DSPEC_CPU_LINUX
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 -qarch=pwr7
-qtune=pwr7 -qipa=threads -qalias=noansi -qipa=level=2
-lsmartheap

401.bzip2: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O3 -qarch=pwr7
-qtune=pwr7 -lhugetlbfs

403.gcc: basepeak = yes

429.mcf: -Wl,-q -O5 -qarch=pwr7 -qtune=pwr7 -qipa=threads
-lhugetlbfs

445.gobmk: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qarch=pwr7
-qtune=pwr7 -qipa=threads -lhugetlbfs

456.hmmer: -Wl,-q -O5 -qarch=pwr7 -qtune=pwr7 -qipa=threads -qsimd
-qassert=refalign -qipa=inline=threshold=2888
-qipa=inline=limit=11880 -lhugetlbfs

458.sjeng: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr7
-qtune=pwr7 -qipa=threads -lhugetlbfs

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECint_rate2006 = 869

IBM Power 740 Express (4.2 GHz, 16 core, SLES)

SPECint_rate_base2006 = 629

CPU2006 license: 11

Test date: Jan-2013

Test sponsor: IBM Corporation

Hardware Availability: Feb-2013

Tested by: IBM Corporation

Software Availability: Dec-2012

Peak Optimization Flags (Continued)

462.libquantum: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr7
-qtune=pwr7 -qipa=threads -q64 -lhugetlbfs

464.h264ref: Same as 458.sjeng

C++ benchmarks:

471.omnetpp: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qarch=pwr7
-qtune=pwr7 -qipa=threads -qrtti -lsmartheap

473.astar: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qarch=pwr7
-qtune=pwr7 -qipa=threads -lhugetlbfs -lsmartheap

483.xalancbmk: -Wl,-q -O4 -qarch=pwr7 -qtune=pwr7 -qipa=threads
-qipa=partition=large -lsmartheap

Peak Other Flags

C benchmarks:

C++ benchmarks:

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/IBM-Power.html>

<http://www.spec.org/cpu2006/flags/IBM-Linux-XL.20121024.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/IBM-Power.xml>

<http://www.spec.org/cpu2006/flags/IBM-Linux-XL.20121024.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

Report generated on Thu Jul 24 15:19:09 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 26 February 2013.