SPEC® CINT2006 Result
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IBM Corporation
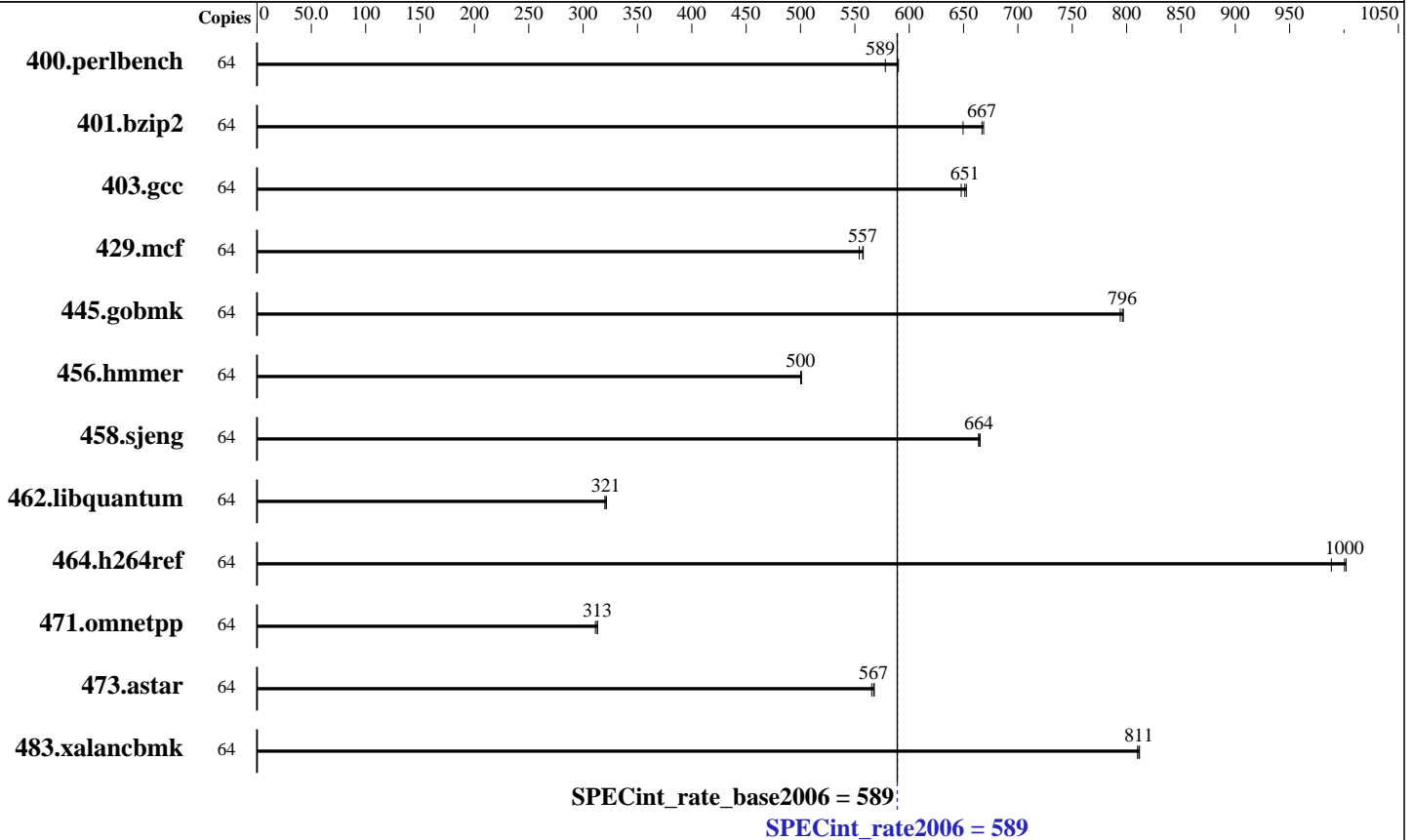
IBM Power 740 Express (4.2 GHz, 16 core, SLES, GCC)

SPECint®_rate2006 = 589

SPECint_rate_base2006 = 589

CPU2006 license: 11	**Test date:** Jan-2013
Test sponsor: IBM Corporation	**Hardware Availability:** Feb-2013
Tested by: IBM Corporation	**Software Availability:** Nov-2012

Copies

Benchmark	Copies	Result
400.perlbench	64	589
401.bzip2	64	667
403.gcc	64	651
429.mcf	64	557
445.gobmk	64	796
456.hmmer	64	500
458.sjeng	64	664
462.libquantum	64	321
464.h264ref	64	1000
471.omnetpp	64	313
473.astar	64	567
483.xalancbmk	64	811

SPECint_rate_base2006 = 589

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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:	1 x 146.8 GB 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 4.7.3 of IBM Advance Toolchain 6.0-1 gcc/g++ compiler
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	-IBM Advance Toolchain 6.0-1

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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	1060	590	1082	578	**1062**	**589**	64	1060	590	1082	578	**1062**	**589**
401.bzip2	64	**926**	**667**	951	650	924	668	64	**926**	**667**	951	650	924	668
403.gcc	64	789	653	795	648	**791**	**651**	64	789	653	795	648	**791**	**651**
429.mcf	64	1053	554	**1047**	**557**	1047	558	64	1053	554	**1047**	**557**	1047	558
445.gobmk	64	842	797	**843**	**796**	845	794	64	842	797	**843**	**796**	845	794
456.hmmer	64	1192	501	**1194**	**500**	1194	500	64	1192	501	**1194**	**500**	1194	500
458.sjeng	64	1164	665	**1166**	**664**	1166	664	64	1164	665	**1166**	**664**	1166	664
462.libquantum	64	4144	320	**4131**	**321**	4126	321	64	4144	320	**4131**	**321**	4126	321
464.h264ref	64	**1416**	**1000**	1433	988	1413	1000	64	**1416**	**1000**	1433	988	1413	1000
471.omnetpp	64	1285	311	1277	313	**1278**	**313**	64	1285	311	1277	313	**1278**	**313**
473.astar	64	**792**	**567**	791	568	795	565	64	**792**	**567**	791	568	795	565
483.xalancbmk	64	544	812	**544**	**811**	545	810	64	544	812	**544**	**811**	545	810

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

Compiler Invocation Notes

For more information about IBM Advance Toolchain, including support, see
ftp://linuxpatch.ncsa.uiuc.edu/toolchain/at/suse/SLES_11/at6.0/release_notes.at6.0-6.0-1.html

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 varibles were set before the runspec command:
  export HUGETLB_VERBOSE=0
  export HUGETLB_MORECORE=yes

Base Compiler Invocation

C benchmarks:
      /opt/at6.0/bin/gcc

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Base Compiler Invocation (Continued)

C++ benchmarks:
    /opt/at6.0/bin/g++

Base Portability Flags

        400.perlbench: -DSPEC_CPU_LINUX_PPC
        462.libquantum: -DSPEC_CPU_LINUX
        464.h264ref: -fsigned-char
        483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -O3 -mcpu=power7 -mtune=power7 -m32 -ffast-math -fpeel-loops
    -funroll-loops -mvsx -maltivec -ftree-vectorize -mpopcntd
    -mrecip=rsqrt -flto -fwhole-program -fuse-linker-plugin -lhugetlbfs

C++ benchmarks:
    -O3 -mcpu=power7 -mtune=power7 -m32 -ffast-math -fpeel-loops
    -funroll-loops -mvsx -maltivec -ftree-vectorize -mpopcntd
    -mrecip=rsqrt -flto -fwhole-program -fuse-linker-plugin -ltcmalloc

Peak Optimization Flags

C benchmarks:

    400.perlbench: basepeak = yes

    401.bzip2: basepeak = yes

    403.gcc: basepeak = yes

    429.mcf: basepeak = yes

    445.gobmk: basepeak = yes

    456.hmmer: basepeak = yes

    458.sjeng: basepeak = yes

    462.libquantum: basepeak = yes

    464.h264ref: basepeak = yes

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Peak Optimization Flags (Continued)

C++ benchmarks:

        471.omnetpp: basepeak = yes

          473.astar: basepeak = yes

    483.xalancbmk: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/IBM-Power.20130226.html
http://www.spec.org/cpu2006/flags/IBM-Linux-AT.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/IBM-Power.20130226.xml
http://www.spec.org/cpu2006/flags/IBM-Linux-AT.xml

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

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