SPEC® CINT2006 Result

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IBM Corporation

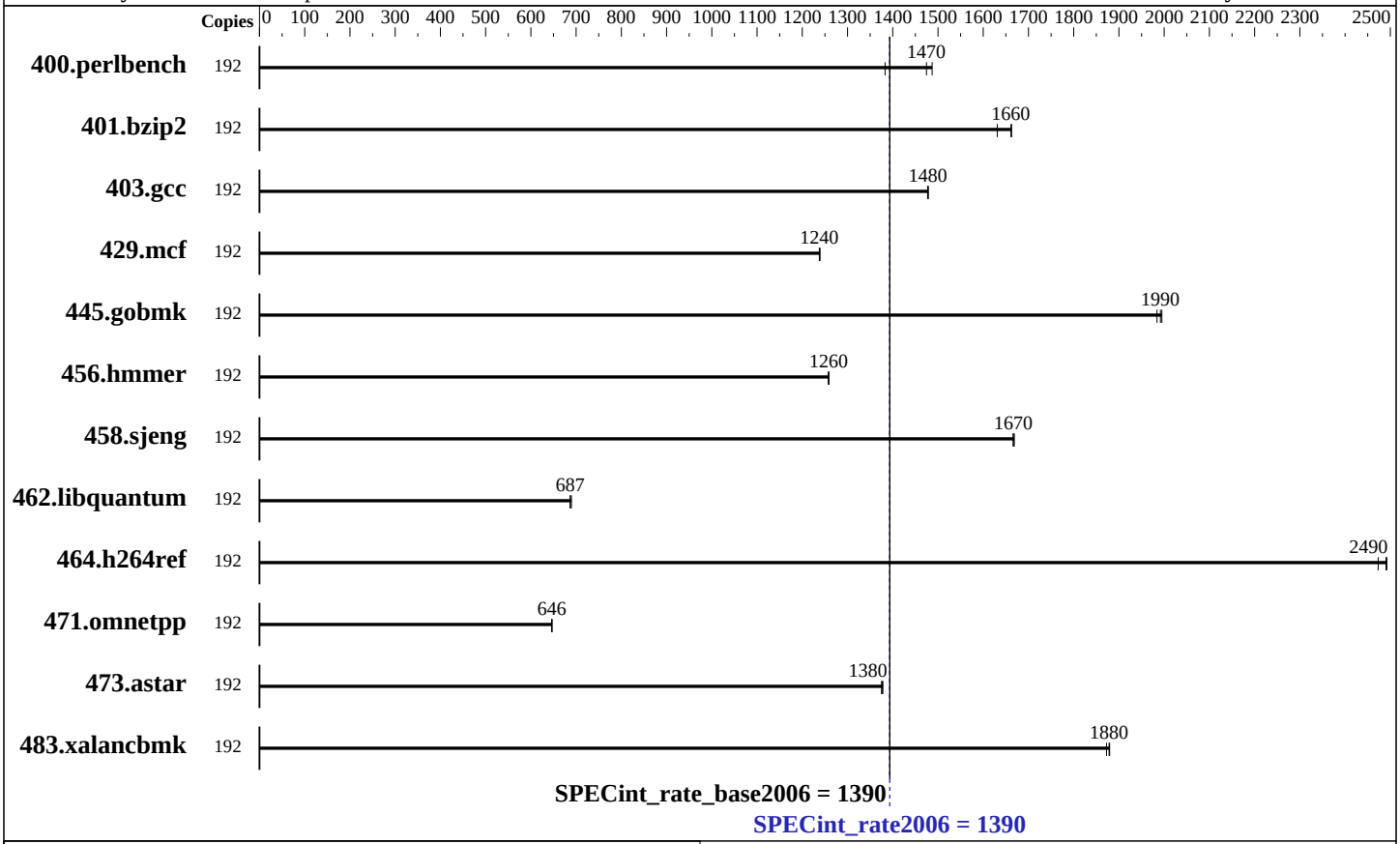
IBM Power 760 (3.4 GHz, 48 core, SLES, GCC)

SPECint®_rate2006 = 1390

SPECint_rate_base2006 = 1390

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

Test date: Jan-2013
Hardware Availability: Mar-2013
Software Availability: Nov-2012



Hardware

CPU Name:	POWER7+
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 3.787 GHz
CPU MHz:	3416
FPU:	Integrated
CPU(s) enabled:	48 cores, 8 chips, 6 cores/chip, 4 threads/core
CPU(s) orderable:	12, 24, 36, 48 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:	512 GB (64 x 8 GB) DDR3 1066 MHz
Disk Subsystem:	3 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 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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	192	1356	1380	**1272**	**1470**	1261	1490	192	1356	1380	**1272**	**1470**	1261	1490
401.bzip2	192	1136	1630	**1115**	**1660**	1114	1660	192	1136	1630	**1115**	**1660**	1114	1660
403.gcc	192	**1046**	**1480**	1045	1480	1046	1480	192	**1046**	**1480**	1045	1480	1046	1480
429.mcf	192	1415	1240	**1414**	**1240**	1413	1240	192	1415	1240	**1414**	**1240**	1413	1240
445.gobmk	192	1010	1990	1015	1980	**1011**	**1990**	192	1010	1990	1015	1980	**1011**	**1990**
456.hmmer	192	1424	1260	1423	1260	**1423**	**1260**	192	1424	1260	1423	1260	**1423**	**1260**
458.sjeng	192	**1394**	**1670**	1392	1670	1394	1670	192	**1394**	**1670**	1392	1670	1394	1670
462.libquantum	192	5795	686	5769	690	**5789**	**687**	192	5795	686	5769	690	**5789**	**687**
464.h264ref	192	1705	2490	**1706**	**2490**	1718	2470	192	1705	2490	**1706**	**2490**	1718	2470
471.omnetpp	192	1857	646	1855	647	**1857**	**646**	192	1857	646	1855	647	**1857**	**646**
473.astar	192	978	1380	980	1380	**979**	**1380**	192	978	1380	980	1380	**979**	**1380**
483.xalancbmk	192	**705**	**1880**	705	1880	707	1870	192	**705**	**1880**	705	1880	707	1870

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 12672 > /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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