SPEC® CINT2006 Result

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IBM Corporation

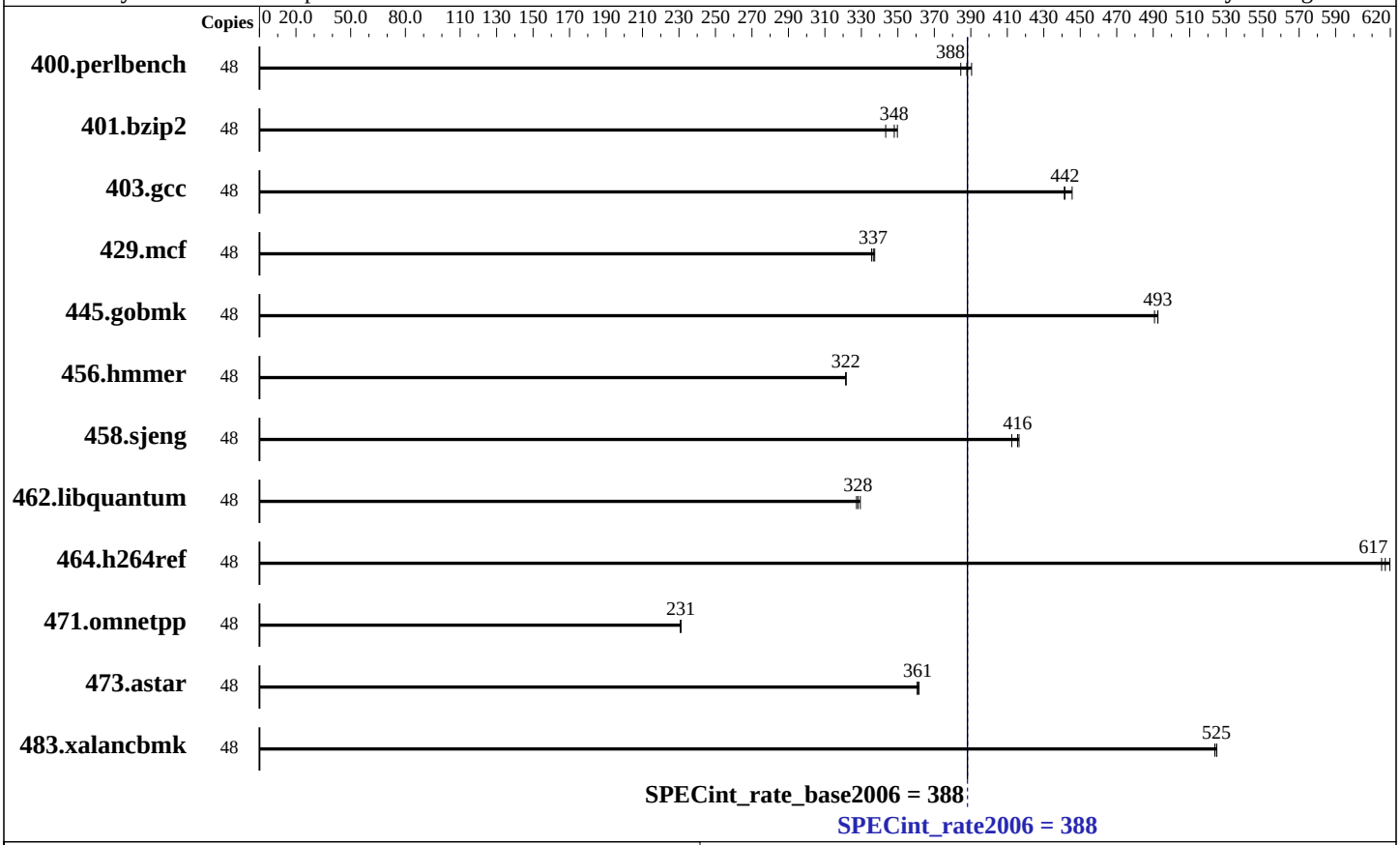
IBM Power 730 Express (3.7 GHz, 12 core, RedHat)

SPECint®_rate2006 = 388

SPECint_rate_base2006 = 388

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

Test date: Aug-2011
Hardware Availability: Sep-2010
Software Availability: Aug-2011



Hardware

CPU Name:	POWER7
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 3.92 GHz
CPU MHz:	3724
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 4 threads/core
CPU(s) orderable:	12 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:	4 MB I+D on chip per core
Other Cache:	None
Memory:	128 GB (16 x 8 GB) DDR3 1066 MHz
Disk Subsystem:	2 x 146.8 GB SAS SFF 15K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1 (ppc64), Kernel 2.6.32-131.0.15.el6.ppc64
Compiler:	C/C++: Version 4.6.1 of IBM Advance Toolchain 5.0-0 gcc/g++ compiler
Auto Parallel:	No
File System:	ext4
System State:	Run Level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	IBM Advance Toolchain 5.0-0 MicroQuill SmartHeap 9

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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	48	1220	384	**1209**	**388**	1201	390	48	1220	384	**1209**	**388**	1201	390
401.bzip2	48	1349	343	**1331**	**348**	1324	350	48	1349	343	**1331**	**348**	1324	350
403.gcc	48	876	441	867	446	**875**	**442**	48	876	441	867	446	**875**	**442**
429.mcf	48	**1301**	**337**	1304	336	1298	337	48	**1301**	**337**	1304	336	1298	337
445.gobmk	48	1026	491	**1022**	**493**	1022	493	48	1026	491	**1022**	**493**	1022	493
456.hmmer	48	**1393**	**322**	1393	322	1393	321	48	**1393**	**322**	1393	322	1393	321
458.sjeng	48	1395	416	1408	412	**1397**	**416**	48	1395	416	1408	412	**1397**	**416**
462.libquantum	48	**3031**	**328**	3038	327	3019	329	48	**3031**	**328**	3038	327	3019	329
464.h264ref	48	1727	615	**1721**	**617**	1714	620	48	1727	615	**1721**	**617**	1714	620
471.omnetpp	48	**1299**	**231**	1300	231	1298	231	48	**1299**	**231**	1300	231	1298	231
473.astar	48	**934**	**361**	932	362	934	361	48	**934**	**361**	932	362	934	361
483.xalancbmk	48	631	525	**631**	**525**	632	524	48	631	525	**631**	**525**	632	524

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

Submit Notes

```
The config file option 'submit' was used.
Benchmarks bound to a processor using numactl on the submit command.
```

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:
  XLFRTEOPTS=intrinthds=1
  HUGETLB_VERBOSE=0
  HUGETLB_MORECORE=yes
```

General Notes

```
For more information about IBM Advance Toolchain, see
http://linuxpatch.ncsa.uiuc.edu/toolchain/at/at5.0/redhat/RHEL6/release_notes.at5.0-5.0-0.html
```

Base Compiler Invocation

C benchmarks:

```
/opt/at5.0/bin/gcc
```

C++ benchmarks:

```
/opt/at5.0/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 -fpeel-loops -funroll-loops
-ffast-math -ftree-vectorize -ftree-loop-linear -mvsx -maltivec
-mpopcntd -mrecip=rsqrt -flto -fwhole-program -fuse-linker-plugin
-lhugetlbfs

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

Base Other Flags

C benchmarks:
-m32

C++ benchmarks:
-m32

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

Continued on next page

Peak Optimization Flags (Continued)

458.sjeng: basepeak = yes

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20111025.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20111025.xml

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