SPEC® CINT2006 Result

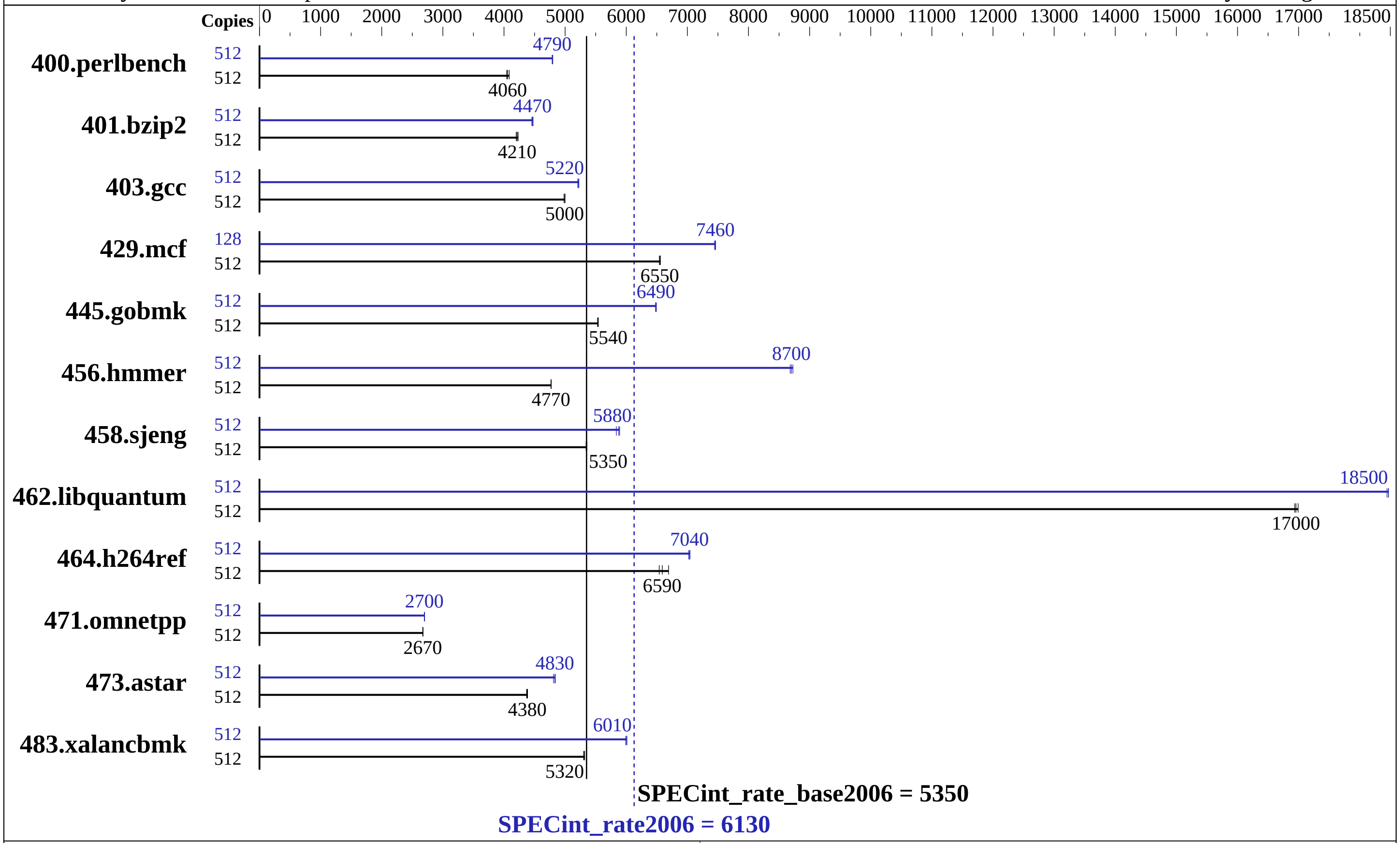
IBM Corporation

IBM Power 795 (4.25 GHz, 128 core, SLES)

SPECint®_rate2006 = 6130

SPECint_rate_base2006 = 5350

CPU2006 license: 11		**Test date:**	Sep-2010
Test sponsor:	IBM Corporation	**Hardware Availability:**	Sep-2010
Tested by:	IBM Corporation	**Software Availability:**	Aug-2010



Hardware

CPU Name:	POWER7
CPU Characteristics:	TurboCore mode
CPU MHz:	4256
FPU:	Integrated
CPU(s) enabled:	128 cores, 32 chips, 4 cores/chip, 4 threads/core
CPU(s) orderable:	48 - 128 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:	16 MB I+D on chip per chip
Memory:	2 TB (256x8 GB) DDR3 1066 MHz
Disk Subsystem:	17x146.8 GB Raid0 SAS SFF 15K RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 SP1 (ppc64), Kernel 2.6.32.12-0.7-ppc64
Compiler:	IBM XL C/C++ for Linux, V11.1
Auto Parallel:	No
File System:	xfs
System State:	Run level 5 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	-Post-Link Optimization for Linux on POWER, Version 5.5.0-3 -MicroQuill SmartHeap 9

IBM Corporation

IBM Power 795 (4.25 GHz, 128 core, SLES)

SPECint_rate2006 = 6130

SPECint_rate_base2006 = 5350

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation
Test date: Sep-2010
Hardware Availability: Sep-2010
Software Availability: Aug-2010

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	512	**1232**	**4060**	1237	4050	1224	4090	512	**1044**	**4790**	1043	4800	1045	4790
401.bzip2	512	**1172**	**4210**	1176	4200	1168	4230	512	**1106**	**4470**	1109	4460	1104	4480
403.gcc	512	825	5000	**825**	**5000**	827	4980	512	789	5230	**790**	**5220**	792	5210
429.mcf	512	712	6560	714	6540	**713**	**6550**	128	157	7440	**157**	**7460**	156	7460
445.gobmk	512	969	5540	**970**	**5540**	971	5530	512	829	6480	827	6490	**828**	**6490**
456.hmmer	512	1002	4770	1001	4770	**1002**	**4770**	512	550	8680	547	8730	**549**	**8700**
458.sjeng	512	**1157**	**5350**	1160	5340	1157	5350	512	**1054**	**5880**	1051	5890	1061	5840
462.libquantum	512	**626**	**17000**	626	16900	624	17000	512	**574**	**18500**	574	18500	575	18400
464.h264ref	512	**1720**	**6590**	1693	6690	1733	6540	512	**1610**	**7040**	1614	7020	1609	7040
471.omnetpp	512	1198	2670	**1198**	**2670**	1196	2680	512	**1187**	**2700**	1184	2700	1187	2700
473.astar	512	**820**	**4380**	822	4370	820	4390	512	**744**	**4830**	743	4840	747	4810
483.xalancbmk	512	**664**	**5320**	664	5320	666	5300	512	588	6010	590	5990	**588**	**6010**

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

Peak Tuning Notes

```
fdpr binary 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
456.hmmer
    with options -O4 -nodp -m power7
462.libquantum
    with options -O4 -vrox -nodp
464.h264ref
    with options -O4 -vrox -nodp -rtb
471.omnetpp
    with options -O3 -lu -1 -nodp -sdp 9
483.xalancbmk
    with options -O3 -m power7
```

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 28160 > /proc/sys/vm/nr_hugepages
The following environment varibles were set before the runspec command:
    export HUGETLB_VERBOSE=0
    export HUGETLB_MORECORE=yes
    export XLFRTEOPTS=intrinthds=1
```

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 -qalias=noansi -qalloca -lhugetlbfs`

C++ benchmarks:
`-O5 -qarch=pwr7 -qtune=pwr7 -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`
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` `-qalias=noansi` `-qipa=level=2` `-lsmartheap`

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

403.gcc: `-Wl,-q` `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4` `-qarch=pwr7` `-qtune=pwr7` `-qalloca` `-lhugetlbfs`

429.mcf: `-Wl,-q` `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5` `-qarch=pwr7` `-qtune=pwr7` `-lhugetlbfs`

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

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

458.sjeng: Same as 429.mcf

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

464.h264ref: Same as 429.mcf

C++ benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

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

473.astar: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qarch=pwr7 -qtune=pwr7 -qipa=inline=threshold=2468 -qipa=inline=limit=11060 -qipa=partition=large -lhugetlbfs -lsmartheap`

483.xalancbmk: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qarch=pwr5 -qtune=pwr5 -qipa=inline=threshold=2468 -qipa=inline=limit=11060 -qipa=partition=large -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.20100901.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/IBM-Linux-XL.20100901.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 14:01:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 November 2010.