SPEC® CINT2006 Result

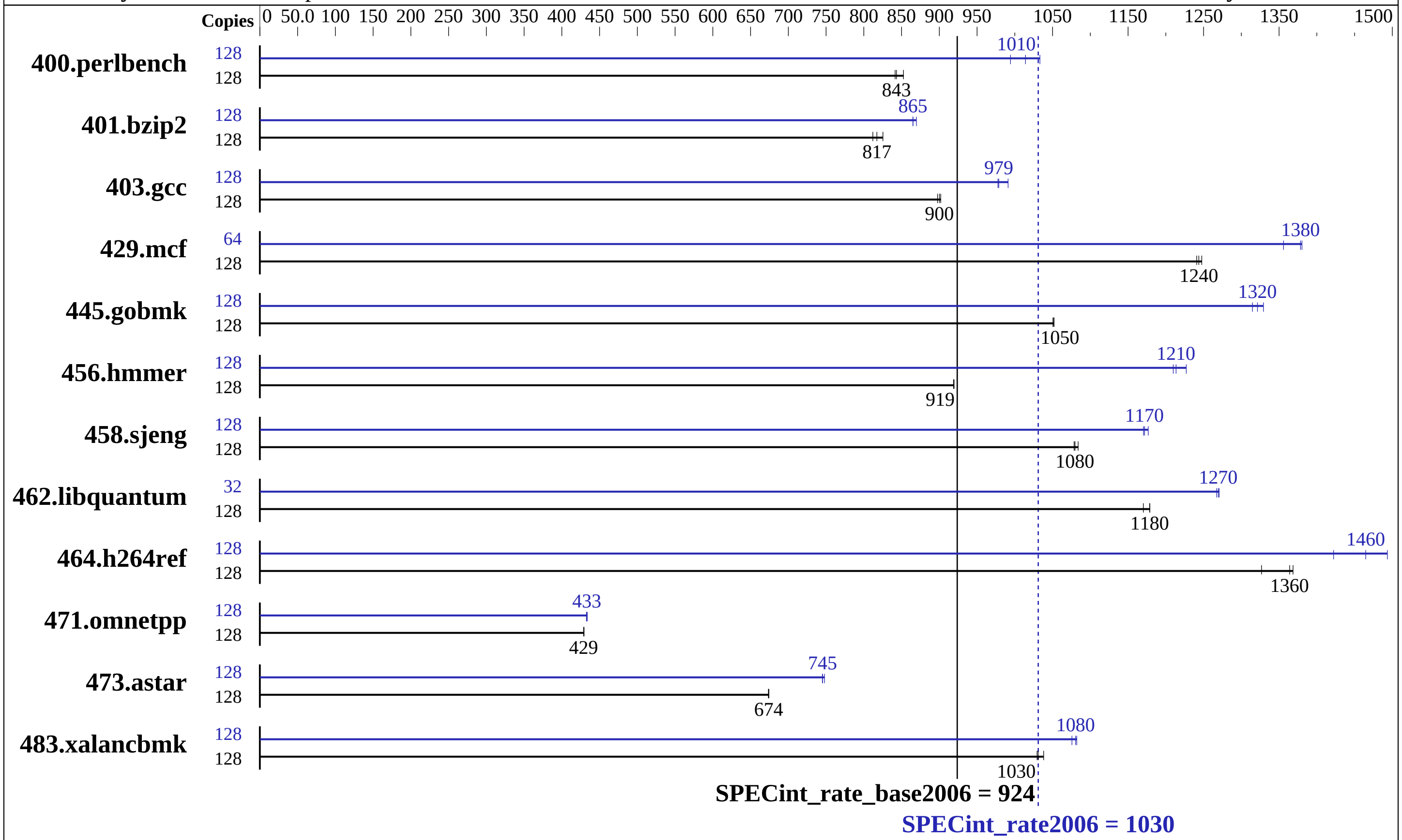
IBM Corporation

SPECint®_rate2006 = 1030

IBM Power 750 Express (3.3 GHz, 32 core, SLES)

SPECint_rate_base2006 = 924

CPU2006 license:	11	**Test date:**	Jan-2010
Test sponsor:	IBM Corporation	**Hardware Availability:**	Feb-2010
Tested by:	IBM Corporation	**Software Availability:**	Dec-2009



Hardware

CPU Name:	POWER7
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 3.64 GHz
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 4 threads/core
CPU(s) orderable:	6,8,12,16,18,24,32 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:	256 GB (32x8 GB) DDR3 1066 MHz
Disk Subsystem:	8x146.8 GB SAS SFF 15K RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (ppc64), Kernel 2.6.27.19-5-ppc64
Compiler:	IBM XL C/C++ for Linux, V10.1 Updated with the Oct2009 PTF
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 5.5.0-1 -MicroQuill SmartHeap 9

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Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	128	1486	841	**1483**	**843**	1467	853	128	1258	994	1210	1030	**1233**	**1010**
401.bzip2	128	1497	825	1521	812	**1511**	**817**	128	**1428**	**865**	1428	865	1420	870
403.gcc	128	1148	898	1143	902	**1145**	**900**	128	1054	978	1040	991	**1053**	**979**
429.mcf	128	**939**	**1240**	936	1250	941	1240	64	430	1360	423	1380	**423**	**1380**
445.gobmk	128	1278	1050	**1277**	**1050**	1277	1050	128	1010	1330	1021	1310	**1016**	**1320**
456.hmmer	128	1300	919	1299	920	**1300**	**919**	128	973	1230	**984**	**1210**	987	1210
458.sjeng	128	1436	1080	1429	1080	**1434**	**1080**	128	**1322**	**1170**	1323	1170	1316	1180
462.libquantum	128	2250	1180	**2250**	**1180**	2266	1170	32	522	1270	523	1270	**522**	**1270**
464.h264ref	128	2135	1330	**2077**	**1360**	2070	1370	128	1897	1490	**1934**	**1460**	1992	1420
471.omnetpp	128	**1865**	**429**	1865	429	1863	429	128	1849	433	1845	434	**1847**	**433**
473.astar	128	1333	674	1334	674	**1333**	**674**	128	1201	748	1206	745	**1206**	**745**
483.xalancbmk	128	**857**	**1030**	851	1040	858	1030	128	821	1080	**817**	**1080**	816	1080

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.
```

Operating System Notes

```
ulimit -s (stack) set to 1048576.
Large pages reserved as follows by root user:
    echo 7040 > /proc/sys/vm/nr_hugepages
System configured with libhugetlbfs library for application access to large pages
Environment variables set before executing benchmarks.
    export HUGETLB_VERBOSE=0
    export HUGETLB_MORECORE=yes
    export XLFRTEOPTS=intrinthds=1
```

General Notes

```
The "IBM Power 750 Express (3.3 GHz)" and "IBM Power 755 (3.3 GHz)"
are electronically equivalent. The results have been measured on the
"IBM Power 755 (3.3 GHz)"

IBM Post-Link Optimization tool with
options "-O4 -omullX -see 0 -m power6" used for
    400.perlbench 401.bzip2 403.gcc 456.hmmer 458.sjeng
    483.xalancbmk
options "-bf -dp -hr -las -pca -RC -RD -rmte -si -tlo -A 64 -isf 104 -lu 8 -rt 0.16
        -hrf 0.18 -ihf 40 -sdp 6 -sdpms 128 -shci 65 -si -sidf 45 -omullX" used for
   429.mcf
options "-q -O3 -A 32 -omullX" used for
```

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General Notes (Continued)

```
      445.gobmk
   options "-bf -dp -lro -nop -RC -RD -tb -tlo -vro -A 4
           -isf 88 -lu 8 -hrf 0.10 -sdp 4 -lun 27 -omullX" used for
      462.libquantum
   options "-O4 -omullX -see 1" used for
      473.astar
   options "-O4" used for
      464.h264ref
   Whenever option "-omullX" was used during the optimization phase,
      option "-imullX" was also used during the instrumentation phase.

 Benchmarks bound to a processor using numactl on the submit command.
 See flags file for details on settings.
```

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 -qalias=noansi -qalloca -lhugetlbfs`

C++ benchmarks:
`-O5 -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 -qalias=noansi -lsmartheap`

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

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

429.mcf: `-Wl,-q -O5 -qnoenablevmx -lhugetlbfs`

445.gobmk: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qnoenablevmx -lhugetlbfs`

456.hmmer: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -lhugetlbfs`

458.sjeng: `-Wl,-q -O5 -lhugetlbfs`

462.libquantum: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qnoenablevmx -q64 -lhugetlbfs`

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: `-qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qrtti -lsmartheap`

473.astar: `-Wl,-q -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O4 -qnoenablevmx -lsmartheap`

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Peak Optimization Flags (Continued)

483.xalancbmk: `-Wl,-q -O5 -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.20100302.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/IBM-Linux-XL.20100302.xml

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

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