SPEC® CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM Power 780 (3.7 GHz, 128 core, RHEL, GCC)

$SPECint®\_rate2006 = \quad 4140$

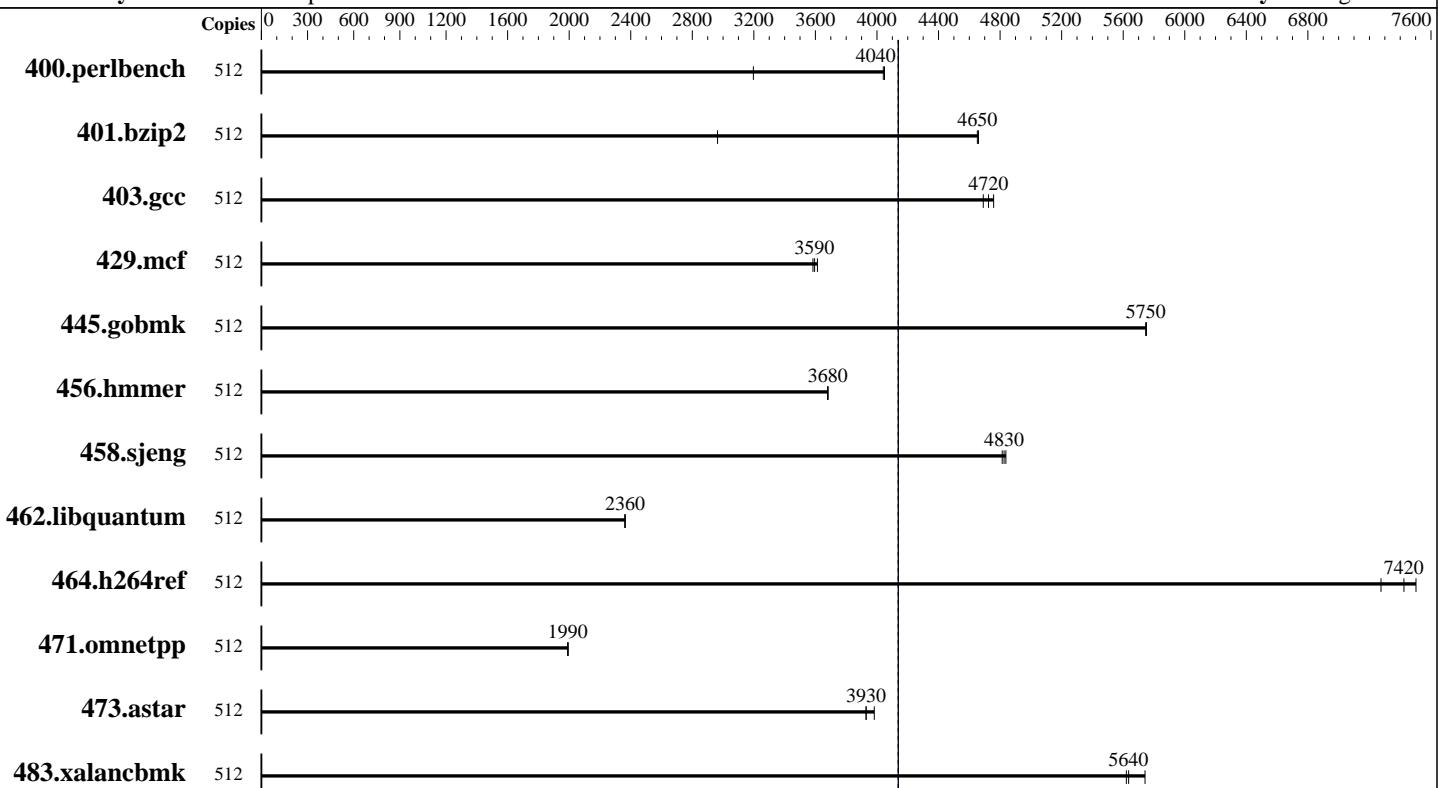$SPECint\_rate\_base2006 = \quad 4140$

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

Test date: Sep-2012
Hardware Availability: Oct-2012
Software Availability: Aug-2012

Copies

Benchmark	Copies	Result
400.perlbench	512	4040
401.bzip2	512	4650
403.gcc	512	4720
429.mcf	512	3590
445.gobmk	512	5750
456.hmmer	512	3680
458.sjeng	512	4830
462.libquantum	512	2360
464.h264ref	512	7420
471.omnetpp	512	1990
473.astar	512	3930
483.xalancbmk	512	5640

SPECint_rate_base2006 = 4140

SPECint_rate2006 = 4140

Hardware

CPU Name:	POWER7+
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 4.144 GHz
CPU MHz:	3724
FPU:	Integrated
CPU(s) enabled:	128 cores, 16 chips, 8 cores/chip, 4 threads/core
CPU(s) orderable:	32,64,96,128 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:	10 MB I+D on chip per core
Other Cache:	None
Memory:	1 TB (64 x 16 GB) DDR3 1066 MHz
Disk Subsystem:	12x146.8 GB SAS SFF 15K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.3 (ppc64) kernel 2.6.32-279.el6.ppc64
Compiler:	C/C++: Version 4.7.2 of IBM Advance Toolchain 6.0-0 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 6.0-0

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM Power 780 (3.7 GHz, 128 core, RHEL, GCC)

SPECint_rate2006 =   4140

SPECint_rate_base2006 = 4140

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Sep-2012

Hardware Availability: Oct-2012

Software Availability: Aug-2012

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	512	**1238**	**4040**	1565	3200	1235	4050	512	**1238**	**4040**	1565	3200	1235	4050
401.bzip2	512	**1062**	**4650**	1667	2960	1060	4660	512	**1062**	**4650**	1667	2960	1060	4660
403.gcc	512	879	4690	866	4760	**872**	**4720**	512	879	4690	866	4760	**872**	**4720**
429.mcf	512	1303	3580	1292	3610	**1299**	**3590**	512	1303	3580	1292	3610	**1299**	**3590**
445.gobmk	512	934	5750	**934**	**5750**	934	5750	512	934	5750	**934**	**5750**	934	5750
456.hmmer	512	**1298**	**3680**	1298	3680	1298	3680	512	**1298**	**3680**	1298	3680	1298	3680
458.sjeng	512	1281	4840	**1284**	**4830**	1287	4810	512	1281	4840	**1284**	**4830**	1287	4810
462.libquantum	512	4488	2360	**4488**	**2360**	4492	2360	512	4488	2360	**4488**	**2360**	4492	2360
464.h264ref	512	1557	7280	**1526**	**7420**	1510	7500	512	1557	7280	**1526**	**7420**	1510	7500
471.omnetpp	512	1607	1990	1605	1990	**1607**	**1990**	512	1607	1990	1605	1990	**1607**	**1990**
473.astar	512	**915**	**3930**	902	3980	915	3930	512	**915**	**3930**	902	3980	915	3930
483.xalancbmk	512	629	5620	615	5740	**627**	**5640**	512	629	5620	615	5740	**627**	**5640**

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/redhat/RHEL6/at6.0/release_notes.at6.0-6.0-0.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.
    ulimit -n (open files) set to 500000.

    Large pages reserved as follows by root user:
    echo 30000 > /proc/sys/vm/nr_hugepages
    echo 6000 > /proc/sys/vm/nr_overcommit_hugepages

Platform Notes

    Service processor memory mirroring property disabled.

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM Power 780 (3.7 GHz, 128 core, RHEL, GCC)

SPECint_rate2006 =   4140

SPECint_rate_base2006 = 4140

CPU2006 license: 11	**Test date:** Sep-2012
Test sponsor: IBM Corporation	**Hardware Availability:** Oct-2012
Tested by: IBM Corporation	**Software Availability:** Aug-2012

General Notes

```
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:
```
    /opt/at6.0/bin/gcc
```

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 -fpeel-loops -funroll-loops
    -ffast-math -ftree-vectorize -mvsx -maltivec -mpopcntd -mrecip=rsqrt
    -flto -fwhole-program -fuse-linker-plugin -lhugetlbfs
```

C++ benchmarks:
```
    -O3 -mcpu=power7 -mtune=power7 -m32 -fpeel-loops -funroll-loops
    -ffast-math -ftree-vectorize -mvsx -maltivec -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`

IBM Corporation

IBM Power 780 (3.7 GHz, 128 core, RHEL, GCC)

SPECint_rate2006 =   4140

SPECint_rate_base2006 = 4140

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

Test date: Sep-2012
Hardware Availability: Oct-2012
Software Availability: Aug-2012

Peak Optimization Flags (Continued)

```
       445.gobmk: basepeak = yes

      456.hmmer: basepeak = yes

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

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 13:38:04 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 23 October 2012.