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

IBM Corporation
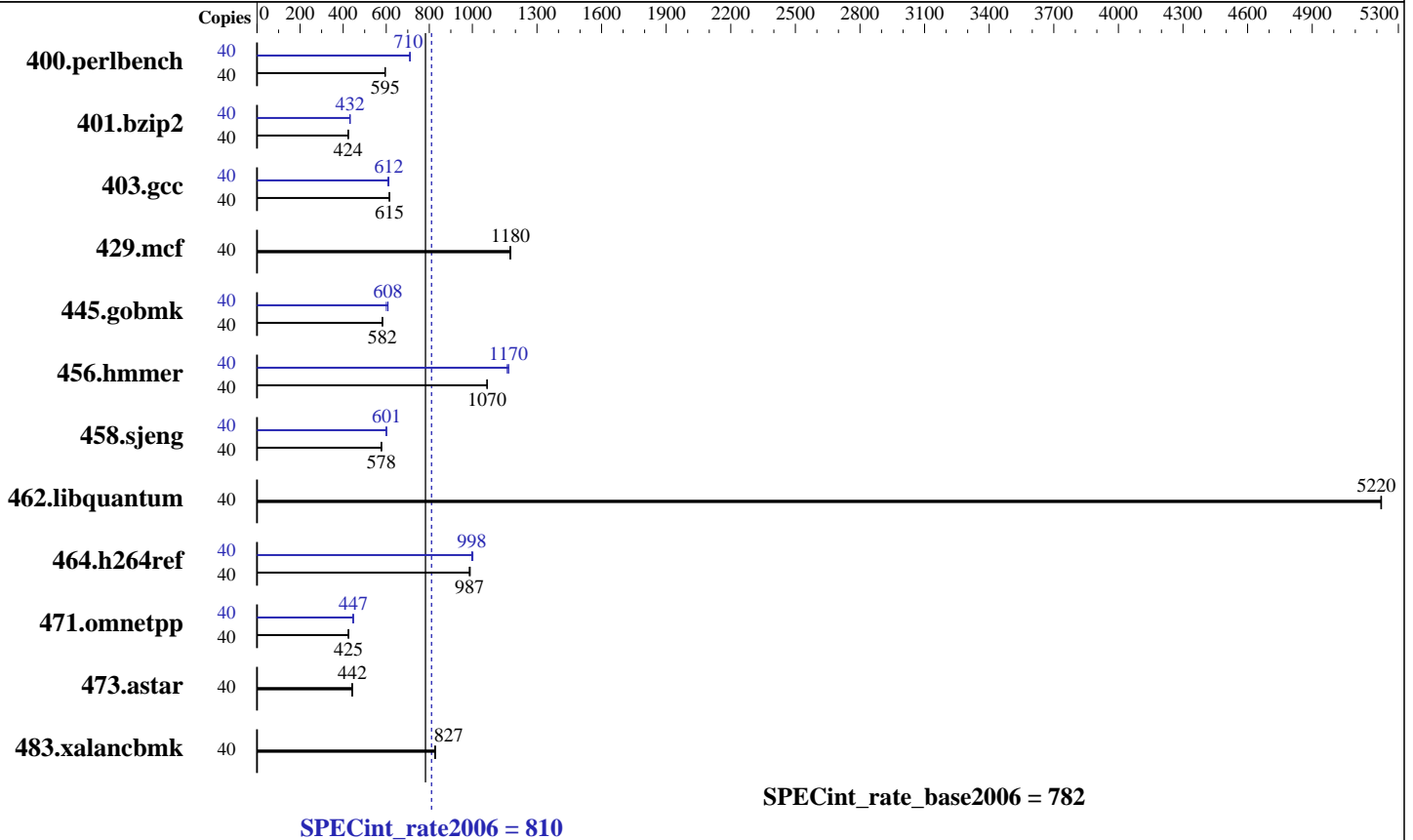
IBM System x3550 M4
(Intel Xeon E5-2670 v2, 2.50 GHz)

SPECint®_rate2006 =   810

SPECint_rate_base2006 = 782

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2014

Hardware Availability: Dec-2013

Software Availability: Sep-2013

SPECint_rate_base2006 = 782

SPECint_rate2006 = 810

Hardware

CPU Name: Intel Xeon E5-2670 v2

CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz

CPU MHz: 2500

FPU: Integrated

CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core

CPU(s) orderable: 1,2 chips

Primary Cache: 32 KB I + 32 KB D on chip per core

Secondary Cache: 256 KB I+D on chip per core

L3 Cache: 25 MB I+D on chip per chip

Other Cache: None

Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)

Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0

Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
2.6.32-358.el6.x86_64

Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux

Auto Parallel: No

File System: ext4

System State: Run level 3 (multi-user)

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: Microquill SmartHeap V10.0

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3550 M4
(Intel Xeon E5-2670 v2, 2.50 GHz)

SPECint_rate2006 =   810

SPECint_rate_base2006 = 782

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

Test date: Feb-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	40	656	595	657	595	**656**	**595**	40	549	711	**550**	**710**	551	709
401.bzip2	40	910	424	912	423	**911**	**424**	40	894	432	**894**	**432**	893	432
403.gcc	40	**524**	**615**	524	614	523	615	40	526	612	530	607	**526**	**612**
429.mcf	40	311	1170	310	1180	**310**	**1180**	40	311	1170	310	1180	**310**	**1180**
445.gobmk	40	720	583	**720**	**582**	721	582	40	690	608	**690**	**608**	699	601
456.hmmer	40	**349**	**1070**	349	1070	349	1070	40	321	1160	**320**	**1170**	320	1170
458.sjeng	40	840	576	**837**	**578**	837	578	40	807	600	**805**	**601**	805	602
462.libquantum	40	159	5220	159	5220	**159**	**5220**	40	159	5220	159	5220	**159**	**5220**
464.h264ref	40	897	986	**897**	**987**	894	990	40	887	997	883	1000	**887**	**998**
471.omnetpp	40	**588**	**425**	588	425	590	424	40	558	448	**559**	**447**	562	445
473.astar	40	637	441	**635**	**442**	634	443	40	637	441	**635**	**442**	634	443
483.xalancbmk	40	333	828	334	826	**334**	**827**	40	333	828	334	826	**334**	**827**

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

Submit Notes

    The numactl mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate numactl commands to bind each copy to a specific processor.
    For details, please see the config file.

Operating System Notes

    Stack size set to unlimited using "ulimit -s unlimited"
    Zone reclaim mode enabled with:
    echo 1 > /proc/sys/vm/zone_reclaim_mode

Platform Notes

    BIOS setting:
    Operating Mode set to Maximum Performance
    Sysinfo program /home/SPECcpu-new/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on x3550M4 Mon Feb 17 14:32:16 2014

    This section contains SUT (System Under Test) info as seen by
    some common utilities. To remove or add to this section, see:
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-2670 v2 @ 2.50GHz
           2 "physical id"s (chips)
           40 "processors"
       cores, siblings (Caution: counting these is hw and system dependent. The

SPEC CINT2006 Result

IBM Corporation

IBM System x3550 M4
(Intel Xeon E5-2670 v2, 2.50 GHz)

SPECint_rate2006 =   810

SPECint_rate_base2006 = 782

Platform Notes (Continued)

```
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 10
       siblings  : 20
       physical 0: cores 0 1 2 3 4 8 9 10 11 12
       physical 1: cores 0 1 2 3 4 8 9 10 11 12
    cache size : 25600 KB

  From /proc/meminfo
    MemTotal:       264462596 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

  /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.4 (Santiago)

  From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
    Linux x3550M4 2.6.32-358.18.1.el6.x86_64 #1 SMP Fri Aug 2 17:04:38 EDT 2013
    x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Feb 17 14:30

  SPEC is set to: /home/SPECcpu-new
    Filesystem     Type     Size  Used Avail Use% Mounted on
    /dev/mapper/vg_x3550m4-lv_home
                   ext4     312G  133G  164G  45% /home

  Additional information from dmidecode:
    BIOS IBM -[D7E133GUS-1.50]- 08/09/2013
    Memory:
     8x Not Specified Not Specified
     16x Samsung M393B2G70QH0-CMA 16 GB 1867 MHz 2 rank

  (End of data from sysinfo program)
  "Not Specified" memory information from dmidecode indicates unused DIMM slots.
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/SPECcpu-new/libs/32:/home/SPECcpu-new/libs/64:/home/SPECcpu-new/sh"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  Filesystem page cache cleared with:
```

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3550 M4
(Intel Xeon E5-2670 v2, 2.50 GHz)

SPECint_rate2006 =   810

SPECint_rate_base2006 = 782

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

Test date: Feb-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

General Notes (Continued)

```
echo 1>        /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/sh -lsmartheap
```

Base Other Flags

C benchmarks:

```
        403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc  -m32
```

```
    400.perlbench: icc -m64
```

```
       401.bzip2: icc -m64
```

SPEC CINT2006 Result

IBM Corporation

IBM System x3550 M4
(Intel Xeon E5-2670 v2, 2.50 GHz)

SPECint_rate2006 =   810

SPECint_rate_base2006 = 782

Peak Compiler Invocation (Continued)

```
      456.hmmer: icc -m64

      458.sjeng: icc -m64

C++ benchmarks:
      icpc -m32
```

Peak Portability Flags

```
     400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
        401.bzip2: -DSPEC_CPU_LP64
        456.hmmer: -DSPEC_CPU_LP64
        458.sjeng: -DSPEC_CPU_LP64
     462.libquantum: -DSPEC_CPU_LINUX
     483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

```
C benchmarks:

     400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                    -auto-ilp32

        401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                    -opt-prefetch -auto-ilp32 -ansi-alias

          403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

          429.mcf: basepeak = yes

        445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                    -ansi-alias -opt-mem-layout-trans=3

        456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

        458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                    -unroll4 -auto-ilp32

     462.libquantum: basepeak = yes

       464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                    -unroll2 -ansi-alias
```

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3550 M4
(Intel Xeon E5-2670 v2, 2.50 GHz)

SPECint_rate2006 =   810

SPECint_rate_base2006 = 782

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

Test date: Feb-2014
Hardware Availability: Dec-2013
Software Availability: Sep-2013

Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2)
`-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs`
`-L/sh -lsmartheap`

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.xml

SPEC and SPECint are registered trademarks of the Standard Performance
Evaluation Corporation. All other brand and product names appearing in
this result are trademarks or registered trademarks of their respective
holders.

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 21:50:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 11 March 2014.