SPEC® CINT2006 Result
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IBM Corporation
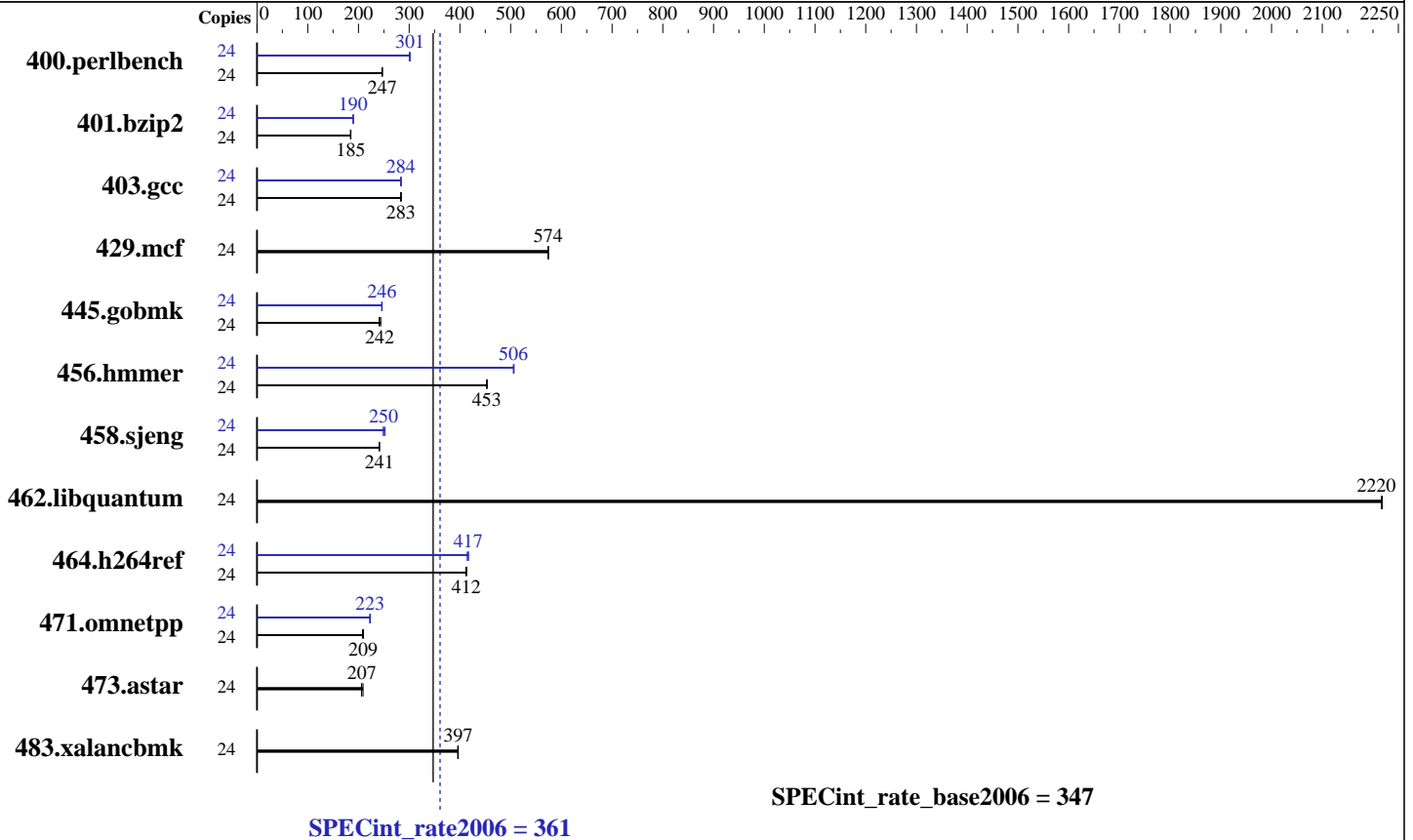
IBM BladeCenter HS23
(Intel Xeon E5-2618L v2, 2.00 GHz)

$SPECint®\_rate2006 =$ 361

$SPECint\_rate\_base2006 =$ 347

CPU2006 license: 11	**Test date:** Jan-2014
Test sponsor: IBM Corporation	**Hardware Availability:** Dec-2013
Tested by: IBM Corporation	**Software Availability:** Sep-2013

Copies

Benchmark	Copies	Peak	Base
400.perlbench	24	301	247
401.bzip2	24	190	185
403.gcc	24	284	283
429.mcf	24		574
445.gobmk	24	246	242
456.hmmer	24	506	453
458.sjeng	24	250	241
462.libquantum	24		2220
464.h264ref	24	417	412
471.omnetpp	24	223	209
473.astar	24		207
483.xalancbmk	24		397

SPECint_rate_base2006 = 347

SPECint_rate2006 = 361

Hardware

CPU Name:	Intel Xeon E5-2618L v2
CPU Characteristics:	
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz)
Disk Subsystem:	1 x 300 GB SAS, 10000 RPM
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

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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	24	948	247	952	246	**949**	**247**	24	777	302	781	300	**778**	**301**
401.bzip2	24	1257	184	1251	185	**1254**	**185**	24	1219	190	1223	189	**1222**	**190**
403.gcc	24	**682**	**283**	682	283	679	285	24	**681**	**284**	679	284	683	283
429.mcf	24	381	574	**381**	**574**	381	574	24	381	574	**381**	**574**	381	574
445.gobmk	24	**1041**	**242**	1046	241	1032	244	24	1024	246	1021	247	**1022**	**246**
456.hmmer	24	495	453	493	454	**494**	**453**	24	443	505	**443**	**506**	442	507
458.sjeng	24	1205	241	1202	242	**1203**	**241**	24	**1164**	**250**	1151	252	1167	249
462.libquantum	24	224	2220	224	2220	**224**	**2220**	24	224	2220	224	2220	**224**	**2220**
464.h264ref	24	1285	413	**1288**	**412**	1290	412	24	1274	417	1282	414	**1275**	**417**
471.omnetpp	24	**717**	**209**	715	210	721	208	24	675	222	671	223	**673**	**223**
473.astar	24	818	206	806	209	**816**	**207**	24	818	206	806	209	**816**	**207**
483.xalancbmk	24	**418**	**397**	419	396	417	397	24	**418**	**397**	419	396	417	397

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"

Platform Notes

Operating Mode set to Maximum Perfomance in BIOS
Sysinfo program /cpu2006.1.2_14.0_updated/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on HS23-IVB Wed Jan 15 15:23:44 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 E5-2618L v2 @ 2.00GHz
      2 "physical id"s (chips)
      24 "processors"
   cores, siblings (Caution: counting these is hw and system dependent. The
   following excerpts from /proc/cpuinfo might not be reliable. Use with
   caution.)
      cpu cores : 6

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Platform Notes (Continued)

```
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
    cache size : 15360 KB

  From /proc/meminfo
    MemTotal:       132131468 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 HS23-IVB 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
    x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Jan 15 15:19

  SPEC is set to: /cpu2006.1.2_14.0_updated
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/mapper/vg_hs23ivb-lv_root
                   ext4     50G  6.9G   40G  15% /

  Additional information from dmidecode:
    BIOS IBM -[TKE135FUS-1.50]- 08/14/2013
    Memory:
    8x Micron 36JDZS2G72PZ-1G9E1 16 GB 1333 MHz 2 rank
    8x Not Specified Not Specified

  (End of data from sysinfo program)
  Memory speed from dmidecode lists the downclocked speed of the run.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006.1.2_14.0_updated/libs/32:/cpu2006.1.2_14.0_updated/libs/64:/cpu2006.1.2_14.0_updated/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:
  echo 1>        /proc/sys/vm/drop_caches
  runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
```

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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`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

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

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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
```

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
```

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Peak Optimization Flags (Continued)

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

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

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