SPEC® CINT2006 Result
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IBM Corporation
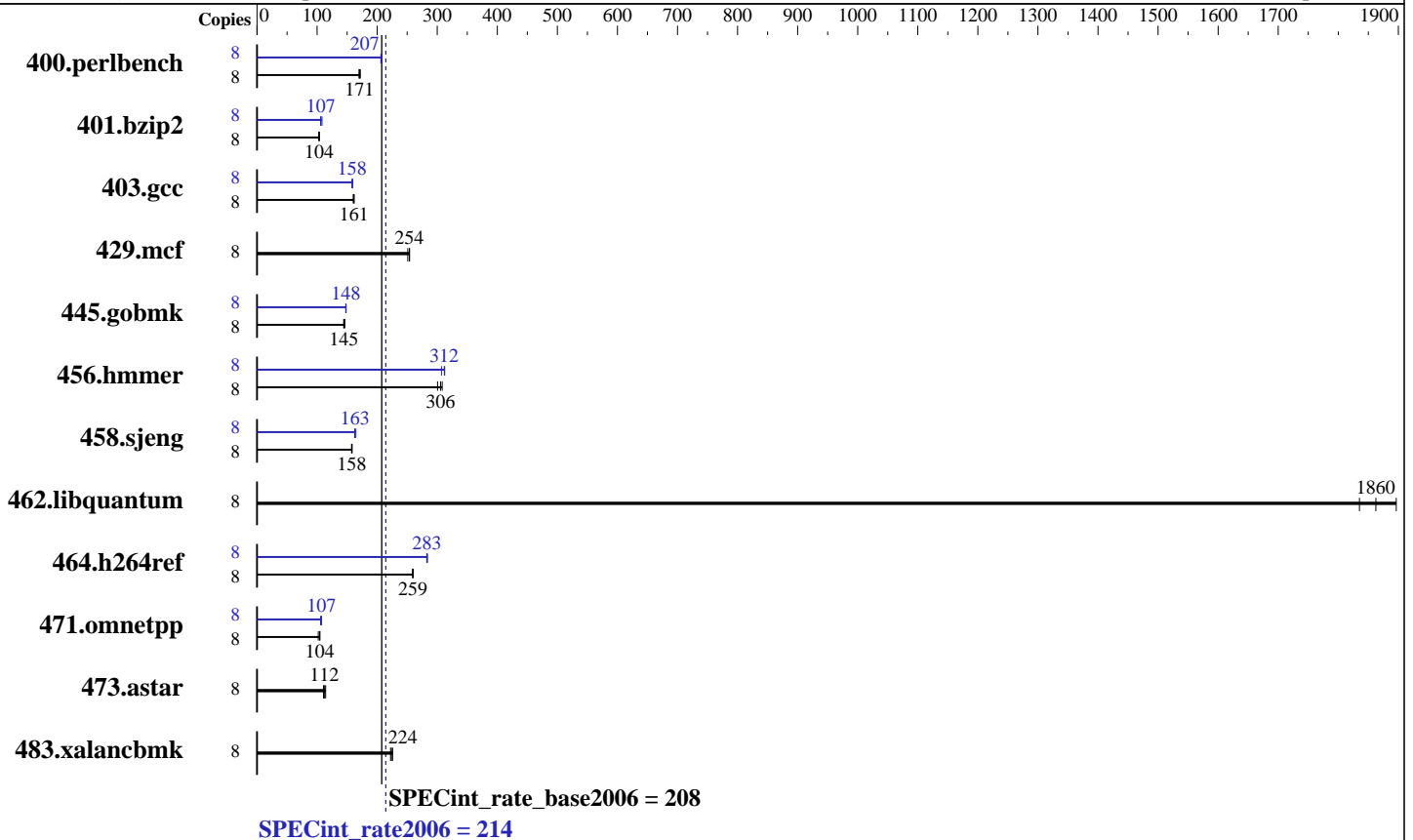
IBM System x3250 M5
(Intel Xeon E3-1240 v3, 3.40 GHz)

$SPECint®\_rate2006 =$ 214

$SPECint\_rate\_base2006 =$ 208

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

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

Benchmark bar chart — Copies axis from 0 to 1900:

- 400.perlbench: 8 — 207; 8 — 171
- 401.bzip2: 8 — 107; 8 — 104
- 403.gcc: 8 — 158; 8 — 161
- 429.mcf: 8 — 254
- 445.gobmk: 8 — 148; 8 — 145
- 456.hmmer: 8 — 312; 8 — 306
- 458.sjeng: 8 — 163; 8 — 158
- 462.libquantum: 8 — 1860
- 464.h264ref: 8 — 283; 8 — 259
- 471.omnetpp: 8 — 107; 8 — 104
- 473.astar: 8 — 112
- 483.xalancbmk: 8 — 224

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Hardware

CPU Name:	Intel Xeon E3-1240 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)
Disk Subsystem:	1 x 1 TB SATA, 7200 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	8	460	170	**458**	**171**	455	172	8	**378**	**207**	377	207	379	206
401.bzip2	8	743	104	751	103	**745**	**104**	8	**725**	**107**	730	106	714	108
403.gcc	8	399	162	**399**	**161**	402	160	8	**407**	**158**	404	160	407	158
429.mcf	8	291	251	287	254	**288**	**254**	8	291	251	287	254	**288**	**254**
445.gobmk	8	581	144	574	146	**579**	**145**	8	566	148	**568**	**148**	568	148
456.hmmer	8	**244**	**306**	248	301	242	308	8	239	312	**239**	**312**	243	307
458.sjeng	8	**614**	**158**	611	158	615	157	8	596	163	588	165	**594**	**163**
462.libquantum	8	90.3	1840	**89.0**	**1860**	87.4	1900	8	90.3	1840	**89.0**	**1860**	87.4	1900
464.h264ref	8	684	259	**682**	**259**	681	260	8	624	284	**626**	**283**	626	283
471.omnetpp	8	478	105	**479**	**104**	491	102	8	**467**	**107**	472	106	465	108
473.astar	8	508	111	492	114	**499**	**112**	8	508	111	492	114	**499**	**112**
483.xalancbmk	8	**247**	**224**	245	226	248	222	8	**247**	**224**	245	226	248	222

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

Submit Notes

        The taskset mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate taskset 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

        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 x3250M5 Wed Mar 5 14:59:26 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 E3-1240 v3 @ 3.40GHz
               1 "physical id"s (chips)
               8 "processors"
           cores, siblings (Caution: counting these is hw and system dependent. The
           following excerpts from /proc/cpuinfo might not be reliable. Use with
           caution.)

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Platform Notes (Continued)

```
      cpu cores : 4
      siblings  : 8
      physical 0: cores 0 1 2 3
   cache size : 8192 KB

 From /proc/meminfo
    MemTotal:       16299396 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 x3250M5 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 Mar 4 11:30

 SPEC is set to: /home/SPECcpu-new
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/mapper/vg_x3250m5-lv_home
                   ext4    852G   29G  780G   4% /home

 Additional information from dmidecode:
   BIOS IBM -[JUE109OUS-1.00]- 11/20/2013
   Memory:
    2x 0000      1600 MHz
    2x Micron 18KSF1G72AZ-1G6E1 8 GB 1600 MHz 2 rank

 (End of data from sysinfo program)
"2x 0000      1600 MHz" 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
```

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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:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
    -opt-mem-layout-trans=3

C++ benchmarks:
    -xCORE-AVX2 -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

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Peak Compiler Invocation (Continued)

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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div

          429.mcf: basepeak = yes

        445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                   -ansi-alias -opt-mem-layout-trans=3

        456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

        458.sjeng: -xCORE-AVX2(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: -xCORE-AVX2(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:

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Peak Optimization Flags (Continued)

471.omnetpp: `-xCORE-AVX2(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-HSW-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-HSW-A.xml

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

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