SPEC® CINT2006 Result
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IBM Corporation
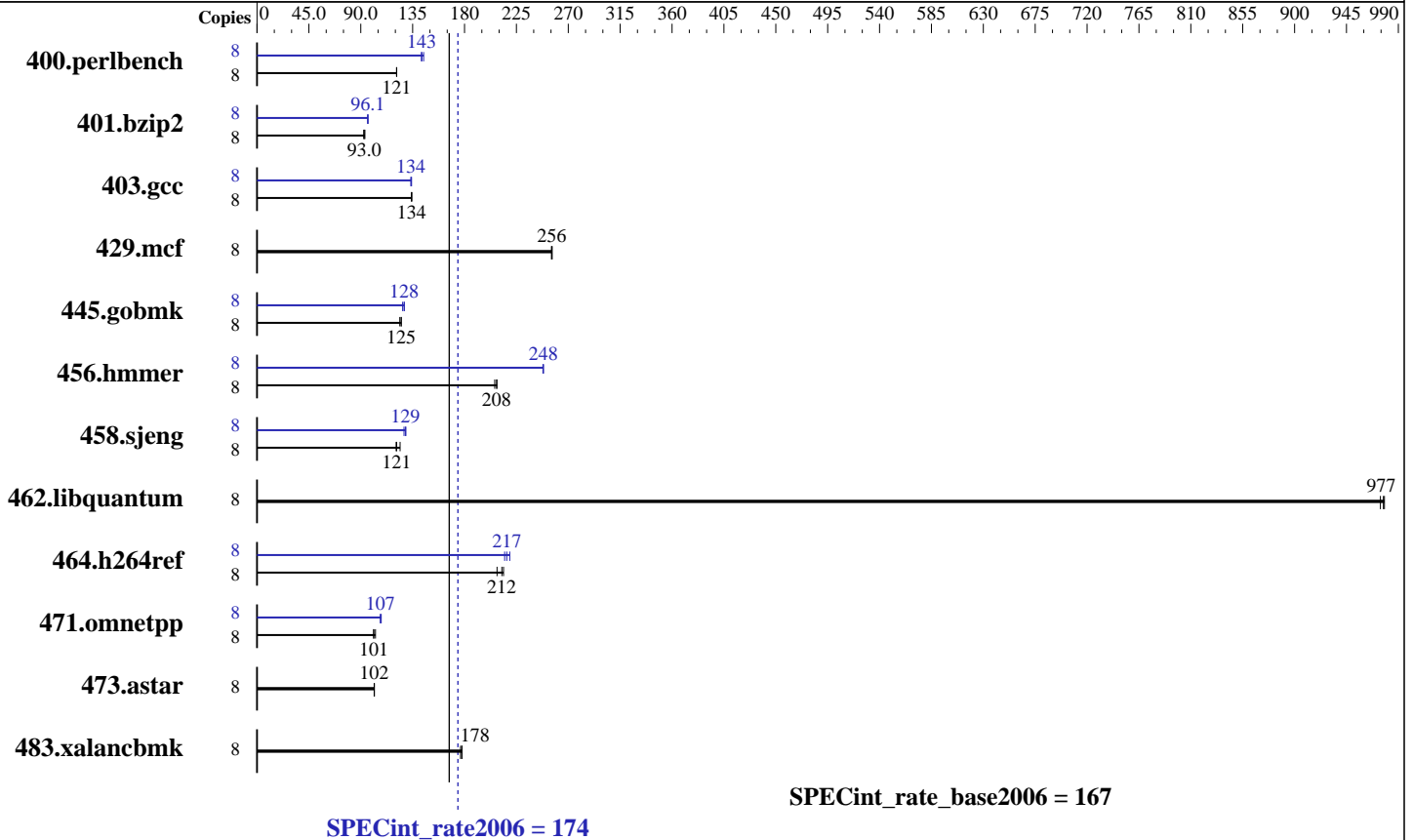
IBM System x3300 M4
(Intel Xeon E5-1410 2.80 GHz)

SPECint®_rate2006 = 174

SPECint_rate_base2006 = 167

SPECint_rate2006 = 174

SPECint_rate_base2006 = 167

Hardware

CPU Name:	Intel Xeon E5-1410
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 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:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem:	1 x 2 TB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 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 V9.01

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Hardware Availability: Aug-2012
Software Availability: Dec-2011

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	645	121	646	121	**645**	**121**	8	541	145	548	143	**547**	**143**
401.bzip2	8	825	93.6	834	92.6	**830**	**93.0**	8	803	96.1	**803**	**96.1**	803	96.1
403.gcc	8	**480**	**134**	480	134	480	134	8	482	134	480	134	**482**	**134**
429.mcf	8	286	255	285	256	**285**	**256**	8	286	255	285	256	**285**	**256**
445.gobmk	8	678	124	671	125	**671**	**125**	8	664	126	657	128	**658**	**128**
456.hmmer	8	**359**	**208**	362	206	359	208	8	301	248	300	248	**301**	**248**
458.sjeng	8	802	121	**799**	**121**	780	124	8	750	129	**752**	**129**	759	128
462.libquantum	8	**170**	**977**	170	974	170	978	8	**170**	**977**	170	974	170	978
464.h264ref	8	850	208	**834**	**212**	828	214	8	824	215	**817**	**217**	807	219
471.omnetpp	8	487	103	**494**	**101**	494	101	8	**467**	**107**	467	107	464	108
473.astar	8	551	102	553	102	**552**	**102**	8	551	102	553	102	**552**	**102**
483.xalancbmk	8	311	178	**311**	**178**	313	177	8	311	178	**311**	**178**	313	177

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 Perfomance
    Sysinfo program /home/SPECcpu1.2/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on YungAn Wed Oct 10 23:46:46 2012

    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 E5-1410 0 @ 2.80GHz
          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 : 10240 KB

 From /proc/meminfo
    MemTotal:       49405796 kB
    HugePages_Total:        0
    Hugepagesize:       2048 kB

 /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.2 (Santiago)

 From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
    Linux YungAn 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64
    x86_64 x86_64 GNU/Linux

 run-level 3 Oct 9 22:40

 SPEC is set to: /home/SPECcpu1.2
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/mapper/vg_yungan-lv_home
                   ext4    1.7T   65G  1.6T   5% /home

 Additional information from dmidecode:
   Memory:
    6x Samsung M393B1K70DH0-CK0 8 GB 1600 MHz 2 rank

 (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/SPECcpu1.2/libs/32:/home/SPECcpu1.2/libs/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:
    icc -m32

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Base Compiler Invocation (Continued)

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/smartheap -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/smartheap -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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-C.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-C.xml

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